ROCKY MOUNTAIN ARSENAL

Final
2010 Five-Year Review Report
for
Rocky Mountain Arsenal
Commerce City
Adams County, Colorado

Review Period: April 1, 2005-March 31, 2010

Volume II of III

Five-Year Review Site Inspection and Interview Checklists

September 2011

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Tetra Tech EC, Inc

Prepared for:
Rocky Mountain Arsenal Remediation Venture Office
Department of the Army
Shell Oil Company
U.S. Fish and Wildlife Service

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Laboratory Data Quality Assurance Review and Evaluation

U.S. Environmental Protection Agency (EPA) Summary and Observations with Remediation Venture Office (RVO) Responses and Clarifications

The following is the result of interviews, data reviews and subsequent document reviews performed from May 4 through May 12, 2010, as part of the 2010 Five Year Review (FYR) evaluation. The purpose was to understand the data quality processes in place for laboratory data at the Rocky Mountain Arsenal (RMA). The observations and recommendations presented below are based on interpretation of the data quality processes gained through these reviews and are subject to change based on future discussion and evaluation.

<u>RVO General Response</u> regarding the EPA's Laboratory Data Quality Assurance Review and Evaluation

In addressing EPA comments 1 through 7 below regarding the EPA's Laboratory Data Quality Assurance Review and Evaluation, it should be pointed out that the RMA laboratory data quality program was developed over 20 years ago based on USATHAMA procedures and protocols. At the time that was the best system available, as EPA CLP protocols had not been developed for chemical agent analytes. To maintain program and data quality consistency, these processes have been kept in place. The RVO Chemical Ouality Assurance Plan provides requirements for data to be assessed, qualified, and documented, and specifies that the RMA Quality Assurance Program (QAP) shall be used as the basis for development and implementation of quality requirements for projectspecific plans and the analytical chemistry support program data collection and reporting requirements. The RVO COAP details the analytical requirements necessary to meet the RMA QAP. Subtier documents required by the RVO CQAP, including the PMC COAP and Data Validation Plan demonstrate a traceable flowdown of requirements for implementation. Outside laboratories contracted to provide analytical laboratory support are required by contract to comply with the CQAP requirements and are subject to audits to ensure compliance. The RVO is not aware of any breakdowns or disconnects in the implementation of this approved process that would call into question the assessment of chemical data produced over the course of the RMA remedy, and plans no changes to the processes in place except as indicated in the comment responses below.

EPA Comment #1

The results of the laboratory data validation process are not transparent to the database users. It is currently unclear in the Rocky Mountain Arsenal Environmental Database (RMAED) which data have been reviewed/validated and which data have not. This lack of transparency is further complicated by a program in the RMAED that automatically assigns an 'A' or acceptable qualifier to the data after 45 days. At present, it is unclear what data has been identified as 'acceptable' as a result of data review vs. data that has been automatically qualified as 'acceptable' based on a computer program. EPA recommends that the RMAED should have a field or qualifier established to identify which data have been reviewed/validated and which data have not been reviewed/validated.

RVO Response:

The Program Management Contractor (PMC) is responsible for data validation and data review. Project managers also review their data and may submit correction letters for their own data in the RMAED. The Sample Tracking (STRACK) program will be modified for data going forward to indicate which lots have been validated by PMC. Data users can then calculate the percentage of their data that has been validated. The RMAED contains flags and codes that designate whether any data have changed.

In 2004 the Army approved development of the RTRAC Web program to check data for valid data format and valid values based on Army-approved lookup tables. RTRAC went online in January 2005. Subsequently, in February 2007 the Army approved the automatic acceptance of data after 45 days. Auto-approved data are distinctly flagged with a unique alpha-numeric combination to indicate that no individual has edited the data as a result of further data review or data validation. The following distinct alphanumeric codes are used to demonstrate the data have only received automatic acceptance: 'A' in the rec_loc_flag field and the digit '1' in the loc_comm_num field. As shown in the chem_comm table, the digit '1' has the following definition: "Default value automatically assigned by RTRAC to all non-rejected data." After subsequent human review and validation, if any changes are made to the data, then the '1' is removed from the loc_comm_num field and a new location comment number is assigned. The new number and its comment are entered in the chem_comm table for user reference.

Furthermore, the Army also approved the RTRAC program to automatically reject data that missed holding times. Auto-rejected data are also distinctly flagged with a unique alpha-numeric combination to prove that no individual has edited the data as a result of further data review or validation. This specific alpha-numeric coding contains the letter 'R' in the rec_loc_flag field and the digit 'O' in the loc_comm_num field. As shown in the chem_comm table, the digit 'O' has the following definition: "Automatic rejection; Missed holding time; data_qual flag=K or L; rec_loc_flag=R." Subsequently, after human review and validation, if any changes are made to the data, then the 'O' is removed from the loc_comm_num field and a new location comment number is assigned. The new number and its comment are entered in the chem_comm table for reference by users.

Two recent (but rare) examples of auto-rejected data being overwritten by subsequent human review are described below:

• Volatile samples missed holding times and were automatically flagged by RTRAC with the 'R' rec_loc_flag and the '0' loc_comm_num. U.S. Geological Survey (USGS) and URS further reviewed the data and sent a letter to the RMAED data manager on September 22, 2008. They concluded that their volatile organic analysis (VOA) data should be accepted and they requested a change to the designation of their data. The RMAED database manager changed the 'R' flag to an 'A' flag and changed the '0' to '1938' to reference the chem_comm database containing the following comment: "On 2008-09-22 USGS accepted VOAs for lot ULN. ARDL storage error. rec_log_flag = A." As an action to

- address this observation, the database manager will be requested by a change letter to change the flag code from 'A' back to 'R' (rejected) on the basis of the missed holding time.
- The only other recent example like this occurred in 2002. The RMAED data loading program (prior to RTRAC Web) flagged VOA data because of missed holding times. The data were flagged as rejected (as documented by the record analysis attachment to letter #2550). Subsequently, after review by the PMC and the Army chemist, the Army chemist sent a letter to the RMAED database manager requesting acceptance of the data. The RMAED database manager changed the 'R' flag to an 'A' flag and changed the '0' to '1804' to reference the chem_comm database containing the following comment: "Override rejection in QC letter #2550 with QC #2638. Accept data, June 13, 2002."

EPA Comment #2

The Remediation Venture Organization (RVO) Chemical Quality Assurance Plan (CQAP) (RVO 2009), Program Management Contractor (PMC) CQAP (PMC 2007), PMC Environmental Data Validation Plan (PMC 2006) and the Post-Laboratory Water Quality Assessment Procedure (RVO 2007), were reviewed as part of the FYR interview/data review process. However, the PMC CQAP and PMC Data Validation Plan could only be reviewed in person, and these PMC plans are not in the Administrative Record Facility (ARF). It is unclear why these plans, which control how samples are analyzed, evaluated and reported, are not part of the Administrative Record. This is especially problematic because the RVO CQAP, which is in the ARF has no discussion of the data validation program. EPA recommends that these documents and any other data quality controlling plans and procedures be submitted to the Administrative Record Facility.

RVO Response:

The RVO Chemical Quality Assurance Plan requires data to be assessed, qualified, and documented, and references the EPA National Functional Guidelines for informational purposes only. Additional requirements documented in the RVO COAP are designed to provide specific validation guidance for Performance Based Methods (PBM). Performance Based Methods were developed at the inception of the RMA program to address the analysis of target analytes not certified by the EPA CLP Program. The PMC CQAP includes guidance for Method Certification which includes calculation of the Method Reporting Limit (MRL). Data validation is addressed in the PMC Chemical Quality Assurance Plan by reference to the PMC Data Validation Plan. As a subtier document under the PMC Chemical Quality Assurance Plan, the PMC Data Validation Plan implements these requirements and includes data evaluation checklists that utilize the EPA National Functional Guidelines for guidance. The Guidelines are referenced in the PMC Data Validation Plan. Therefore the PMC Data Validation Plan does not mimic the RVO Chemical Quality Assurance Plan, rather, it implements the RVO plan requirements. With this flow down and traceability adequately documented in the plans, no revisions to the RVO Chemical Quality Assurance Plan are necessary. The initial version of the PMC Chemical Quality Assurance Plan (Revision 0) was transmitted to the RVO for review to ensure that the content and structure met the expectations of the RVO, and is on file at the JARDF. The updated versions of the PMC Chemical Quality

Assurance Plan (Revision 4) and PMC Data Validation Plan will be submitted to the JARDF to further support the RVO CQAP.

EPA Comment #3

The RVO CQAP links the data assessment, qualification, and documentation of laboratory results to the most recent editions of the EPA National Functional Guidelines for Data Review. However, the PMC CQAP only references the PMC Environmental Data Validation Plan (and project specific QA plans) and does not discuss adherence to the EPA National Functional Guidelines. Therefore, it is unclear if the PMC CQAP and Data Validation Plan is consistent with the RVO CQAP requirements. EPA recommends that the link between the PMC CQAP requirements and the EPA National Functional Guidelines be defined, or justification provided for not using the EPA National Functional Guidelines.

RVO Response:

See response to Comment #2 above. The RVO CQAP references Functional Guidelines for informational purposes. Additional requirements documented in the RVO CQAP are designed to provide specific validation guidance for Performance Based Methods. Performance Based Methods were developed at the inception of the RMA program to address the analysis of target analytes not certified by the EPA CLP Program. Performance Based Methods are the basis for the RMA analytical program and have been since its inception, and therefore supersede Functional Guidelines for the program at RMA. Guidelines present in the RVO CQAP for Performance Based Methods are present in the PMC CQAP including the use of identified qualifiers. The PMC Data Validation Plan references Functional Guidelines and in conjunction with the PMC CQAP contains specific guidance for the evaluation of analytical data generated by Performance Based Methods.

EPA Comment #4

The PMC Data Validation Plan contains checklists for checking the data package. The checklists are comprehensive and have reasonable control levels that correspond closely to EPA functional guidelines. However, there were no written actions in the PMC Data Validation Plan that correspond to actions identified in the EPA functional guidelines. As a result, it is unclear how the data qualifiers are applied based on the checklist results (the data qualifiers are not discussed in the Data Validation Plan). Instead, the qualifiers are applied primarily through "professional judgment". Therefore, the Data Validation Plan does not provide prescriptive criteria that would insure that qualification of the data was consistent over the five-year period. EPA recommends that procedures for applying data qualifiers based on the data validation checklists be identified or prepared.

RVO Response:

The PMC Data Validation Plan in conjunction with the PMC Chemical Quality Assurance Plan contains specific guidance for the evaluation of RMA analytical data. The quality control requirements for the development of certified methods and required laboratory audits are clearly defined in the PMC Chemical Quality Assurance Plan. The

individual laboratory contracts include applicable sections of the PMC Chemical Quality Assurance Plan. The laboratory data are evaluated for adherence to these requirements, and data qualifiers specific to the program and identified in the PMC Chemical Quality Assurance Plan are applied when appropriate. The data qualifiers utilized are not those identified in EPA Functional Guidelines but are those specific to the RMA program and have been utilized since its inception. In addition, the contracted laboratories are periodically audited to ensure compliance with the laboratory quality assurance requirements. All laboratories performing work in support of RMA remediation activities are also required to analyze Performance Evaluation samples prepared by an independent source. The PMC uses the results of the Performance Evaluation samples as an additional tool to evaluate the performance of the laboratories.

EPA Comment #5

With respect to the Post-Laboratory Water Quality Assessment Procedure (RVO 2007), this procedure tends to obscure the line between data evaluation for the purpose of data quality or validity, and data evaluation for the purpose of data usability. EPA recommends that the Procedure only be applied as a means of assessing data usability for the intended purpose outlined in a project SAP or QAPP. It is also not clear that a data validation is performed prior to initiating the data evaluation discussed in the procedure, which is assumed in EPA guidance documents referenced in the Procedure. The use of the 'Z' qualifier in the Data_Qual field in the Chem_Rec table, as an indication of data usability, is appropriate. However, the use of the Procedure to qualify data as rejected (in the Rec_Loc_Flag field) is not appropriate if the results of the data validation process do not indicate that the data is of unacceptable quality.

RVO Response:

The EPA recommendations concerning the means of assessing data usability for the intended purpose outlined in a project Sampling and Analysis Plan (SAP) are currently stated in the procedure. It is also clear that the lab data validation is required prior to implementing the procedure.

The comment stating "the use of the Procedure to qualify data as rejected (in the Rec_Loc_Flag field) is not appropriate if the results of the data validation process do not indicate that the data is of unacceptable quality" is not valid, as the primary purpose of the procedure is to review data that the lab data validation process has indicated was acceptable. The data reviewed using this procedure are only for data that do not appear to meet the data quality objectives identified in the appropriate sampling plan. It is important to note that the statistical confidence intervals for the analytical method reporting limits MRLs) are 95 percent as indicated in the RVO CQAP in Section 4.2.1.2. This equates to a false negative error (the chance of determining an analyte is not present above the method reporting limit (MRL) when, in fact, it is present) and a false positive error (the chance of determining an analyte is present above the MRL when, in fact, it is not) of five percent. In other words, the possibility of any single analysis producing an erroneous result, assuming all identifiable factors and inputs are perfect, is between zero and five percent. This is commonly referred to in statistics as the term "chance and chance alone."

The Post-Laboratory Water Quality Assessment Procedure is designed to review data that appear to fall into this zero to five percent range or may be invalid due to a variety of field factors, including sampling and hydrogeologic issues. Data reviewed using this procedure have been validated by RMA laboratory data validation procedures. The purpose of the procedure is to investigate if enough evidence exists to make a reasonable determination of the validity of the data value based on factors outside the scope of a laboratory data validation. Therefore, based on the statistical design associated with the MRL and factors outside the realm of laboratory data validation, it is possible to make a case for rejection of a data point that has passed the laboratory data validation process.

As noted in the title of the document in question, the assessment is performed after the data have been deemed acceptable from an analytical perspective (Post-Laboratory). In all instances during the application of this procedure the PMC Data Validation Specialist was consulted to ensure the data were validated prior to the commencement of the Post-Laboratory investigation. In addition, Section 1.0 of the Post-Laboratory Assessment Procedure states "For water-quality data that has passed all laboratory quality-control evaluations, yet appears questionable, it is desirable to determine and document analytical or sampling errors that may not have been detected during the rigorous pre-release review by the laboratory analysts and quality-control staff."

The EPA is correct that the Post Laboratory Water Quality Data Assessment Procedure is only used on data that appear anomalous relative to other data collected for the same location. The decision to utilize the procedure is the responsibility of the entity generating the data and is based on an internal review of the data conducted by the data generator. The RVO recognizes the dynamic nature of water quality data; however the Post Laboratory Water Quality Data Assessment Procedure is utilized for data that appears anomalous to a degree that exceeds what one would expect due to natural factors. The procedure is implemented on an extremely limited basis; in fact it has been utilized on only 0.0027 percent of the CSRG data generated since the procedure was implemented in February 2007 (two out of over 74,000 data points).

The RVO will revise the Post Laboratory Water Quality Data Assessment Procedure in a manner that data will not be rejected based on the procedure. Data evaluated by the procedure that is not considered usable will be assigned a "Z" data qualifier (questionable data). Also, as noted in the response to EPA Comment 40e above, in regard to the DIMP detection above the CSRG in well 37032 that occurred in August 2009, the RMA Environmental Database will be amended to change the August 10, 2009 sample result flagging code for the DIMP result from "R" (rejected) to "Z" (questionable). The RVO will notify the Regulatory Agencies in the future of potential application of the Post Laboratory Water Quality Data Assessment Procedure, and when resampling is performed due to data assessment.

EPA Comment #6

The change control process that is used to change qualifiers for data in the RMAED database does not appear to be documented and controlled in an appropriate manner. Prior to February 2007, written documentation that was sequentially numbered and had a consistent content and

format, were submitted to the RMAED for documenting changes to qualifiers in the database. However, it is unclear that these change control documents were submitted to the ARF for archive. Currently, the documentation for approximately ten years of database changes is kept in a file cabinet with no apparent plans for submittal to the ARF. EPA recommends that this documentation be submitted to the ARF. Since February 2007, the change control documentation is not being prepared with a consistent content or format, is not being sequentially numbered, and is not being filed or submitted to the ARF. EPA recommends that a procedure be adopted for the change control process which includes the format for the documentation, required justification and description of the change, and requirements for maintaining and archiving these documents.

RVO Response:

On February 14, 2007, the Army Chemist wrote a memorandum to the Army Resources and Records Manager at RMA, proposing that data be automatically accepted after 45 days unless DPRA (RMAED database contractor) is notified to reject data per Army Chemist or PMC notification.

On February 20, 2007, the Army Resources and Records Manager concurred with the memo because 99.95 percent of the data passing through RTRAC Web was manually reviewed and validated as acceptable by the Army and PMC Chemists. Therefore, this redundant and time-consuming data acceptance process was discontinued by the Army. Automatic data acceptance began immediately. Since that time, DPRA has received occasional notification via email concerning data rejection or data changes. The RMAED database manager subsequently makes the changes and makes reference to them in the chem_comm table.

The RVO concurs with EPA's recommendation that a procedure be adopted for the change control process, which includes a format for the documentation, required justification and description of the change, and requirements for maintaining and archiving these documents.

The following modifications will be made to the process. All parties that request changes to the RMAED will send change requests to the PMC. The PMC will generate a QC letter to notify the RVO and all users involved in the change control process. Upon receipt of the QC letter, the RMAED database manager will 1) assign a sequential number to the QC letter; 2) enter that number in the loc_comm_num field in the chem_rec table; 3) also enter that same number in the univ_comm_num field in the chem_comm table; 4) and submit the numbered QC letter to be scanned. The resulting PDF can then be viewed like data packets by using the STRACK program.

EPA Comment #7

Based on the interview results, it is possible for data qualifiers in the RMAED to be changed by RMA staff through the PMC Environmental Data Validation Procedure, the Post-Laboratory Procedure, or through processes outside of these procedures. However, it is not clear what qualifications are necessary for RMA staff to authorize changes to the data qualifiers or that all

RMA staff are using consistent procedures or criteria for authorizing changes to the database qualifiers. Review of some of the change control instructions indicate that in some cases the RMA staff are using professional judgment as the only criteria for changing qualifiers in the RMAED. EPA recommends that the qualification of data in the RMAED be performed in a more rigorous manner that includes a centralized approval process, better documentation of the reason for the qualifier change, and a way to differentiate which procedure was used to apply the qualifiers.

RVO Response:

DPRA, Incorporated maintains the RMAED under contract to the Army. DPRA proposed a centralized approval process as discussed in the response to Comment #6.

EPA Review Notes from Interviews and Data Reviews

Following are the results of reviews performed as part of the laboratory data quality assessments:

Date of Interview: May 4, 2010

Location: Trailer Z92, Rocky Mountain Arsenal

Participants:

Kathy Weinel, Lab Coordinator, PMC (Interviewee)
Deborah Hosford, Data Validation, PMC (Interviewee)
Bruce Fritz, Lab Data Input, DPRA (Interviewee)
Ron Bertram, EPA (Observer)
Steve Singer, PWT (Interviewer for EPA)
Bill Lutz, PWT (Interviewer for EPA)
Tom Martella, TCHD (Observer)
Vince Stewart, TCHD (Observer)
Rick Beardslee, Army (Observer)

The focus of the interview was to establish the process by which laboratory results are provided by the contract laboratories to the RVO and subsequent data input, data checking, data quality assessment and finalization of data results in the RMAED.

Question: Where were the samples analyzed during the FYR period?

Response: Per Kathy Weinel, During the FYR, data were analyzed both at an onpost laboratory managed by PMC and at off-post commercial laboratories of which ARDL was the main laboratory. The on-site lab did mostly soils analysis and was shut down in June 2008.

Question: Does the PMC lab group handle all laboratory work for the RMA?

Response: Per Kathy Weinel, all laboratory results come into the PMC laboratory group no matter what project or group collects the samples. Sample collection, packing, and shipping are the responsibility of the individual projects.

Question: What are the controlling documents for the laboratory data quality processes?

Response: Per Kathy Weinel, The PMC Chemical Quality Assurance Plan (CQAP) is attached to the statement of work for the laboratories. There is also an RVO CQAP that is a higher tier document that the PMC follows to write the PMC CQAP. The PMC CQAP provides instruction to the laboratory on how to perform the chemical analyses and identifies the minimum quality control requirements. Data Validation is controlled by the PMC Environmental Data Validation Plan. The PMC CQAP includes a list of data qualifiers that is used by the labs for qualifying data.

Question: EPA has a copy of the RVO CQAP. Can EPA get copies of the PMC CQAP and Data Validation Plan?

Response: Per Kathy Weinel, the PMC CQAP and PMC Data Validation Plans are considered proprietary documents that would require management approval for distribution. Note: It was later determined that these documents were not in the ARF and that copies of the PMC documents would not be provided to EPA. EPA was only allowed to view the PMC documents on site, which was done by PWT.

Question: How are the laboratory deliverables provided to the PMC lab group?

Response: Per Kathy Weinel, the lab results come as a formatted electronic data deliverable (EDD). The hard copy lab report is required to be received 10 days after receipt of the EDD. Per Bruce Fritz, the EDD is first checked by the laboratory using the "RTRACK" program developed for RMA. After the lab sends the EDD to RMA, the RTRACK program performs the same check as the data is loaded into the RMAED.

RVO Clarification: RVO concurs.

Question: How are the laboratory qualifiers applied to the data and by whom?

Response: Per Kathy and Bruce, the EDD will have qualifiers that come from the lab that are uploaded into the Chem_Rec table in the RMAED (NOTE: the Chem_Rec table holds all of the RMA analytical results). The RTRACK program will automatically add the qualifiers dealing with holding time exceedances. These qualifiers will show up in the Flag_Code and Data_Qual and Rec_Loc_Flag fields in the RMAED. The Flag_Code field primarily qualifies the data based on field and lab preparation issues. The Data_Qual field will have qualifiers based on issues with the laboratory analysis, and the Rec_Loc_Flag field will qualify based on data acceptability. The Rec_Loc_Flag initially contains a 'P' flag, automatically assigned by the RTRACK program indicating that the results are preliminary. Later this field will be changed to indicate that either the data is acceptable (A) or rejected (R). When the results of the validation are completed, the data_qual field can be updated with additional qualifiers and the Rec_Loc_Flag field can also be changed.

RVO Clarification: Most all of the data does in fact contain the letter 'P' (for "Pre-QC, pending final QC checks") when initially processed by the RTRAC Web program. However, whenever data misses holding times, RTRAC Web immediately flags the data as "rejected" (rec_loc_flag = 'R') upon initial processing.

There is a 45-day period in which the data input to the RMAED occurs, checks against the EDD and the Chain of Custody using an 'STRACK' program are performed, and any data validation or other data quality assessment is performed. However, if no manual changes to the Rec_Loc_Flag have occurred during this time period, the RMAED has a program that automatically replaces the 'P' flag with an 'A' to this field in the Chem_Rec table indicating that the data is acceptable.

RVO Clarification: RVO concurs.

Question: After the data checking and validation process is complete are there other actions that can cause the qualifiers in the Chem Rec table in the RMAED to be changed?

Response: Per Kathy, She is the 'Data User' for the Basin F, HWL, and ELF monitoring projects. Data qualifiers can be changed by the data user.

Question: What procedures would you follow to determine that the data qualifiers should be changed?

Response: Per Kathy, She indicated that she might look at the data and see if it was useable based on the project objectives which would be identified in a SAP.

NOTE: At this point PWT handed her the RVO procedure titled *Post-Laboratory Water Quality Data Assessment Procedure*. PWT asked why she had not identified this RMA procedure in her response. Her answer was that this procedure was for the water team and that she would not necessarily use it. (Note: this procedure is identified to be used for all water projects at RMA).

Question: Does data ever get deleted or overwritten in the Chem_Rec table in the RMAED?

Response: Per Kathy and Bruce, data are almost never deleted from the RMAED. This would only happen when, for example, the Performance Evaluation (PE) data would have been uploaded into the RMAED by mistake. They went on to explain that the PE data does not get uploaded to any database and is only in hard copy form. Data would only get overwritten in the RMAED if the lab were to re-send the results of a re-analysis that was performed within the holding times and based on communication between the PMC and the lab. The results of a resampling would both be in the RMAED.

RVO Clarification: RVO concurs.

Question: How is communication documented between the PMC and the laboratory, that results in a re-analysis or other changes to data?

Response: Per Kathy, The labs do not routinely call PMC when they receive a high value, only for a problem with performing the analysis. NOTE: It was not clear if the results of these problem discussions and the lab actions resulting from the discussions are documented.

Question: How are the lab packages that are validated chosen and what percent validation and verification is performed?

Response: Per Deb Hosford, she randomly selects data packages to do full validation, and the requirement is to do 25 percent validation. However, priority for validation is often placed on higher priority parameters (organics?). Typically the percent validation is higher than 25 percent. Note: She did not indicate that there is a verification process for the remaining 75 percent of the data other than what may be performed by the laboratory as part of their quality control processes.

Question: How do you document what percent validation is performed? Is it an annual percentage or based on some other criteria.

Response: Per Deb Hosford, she does not track the percent validation on an annual basis, it is typically done on a project-specific basis and the percentage is recorded in project data summary reports (DSRs).

Question: The groundwater monitoring programs and the treatment system monitoring programs do not provide DSRs. How do you document what percent validation is performed, and how would the regulatory agencies (RAs) and other database users know how much was done?

Response: Per Deb and Kathy, their group does not get involved in how data are reported for the various projects so they don't know how that information would be communicated.

NOTE: Based on the responses, it is unclear how much validation is performed for projects that do not provide DSRs.

Question: Is there some way that the results of the validation are recorded in the RMAED so that a user could tell what data was validated and what data was not?

Response: Per Deb and Kathy, there is no easy way to do this. Data that have been qualified with an 'R' is typically the result of validation, and some of the qualifiers in the Data_Qual field are the result of the validation process. Deb keeps a spreadsheet that records all of the lab packages that she validates. But this is an internal spreadsheet for her use.

Question: How are the results of the validation that changes the qualifiers in the RMAED documented?

Response: Per Bruce and Kathy, the result of the validation goes onto a validation checklist and it is believed that this checklist is retained in the ARF.

RVO Clarification: Bruce Fritz is not familiar with the PMC validation checklist. This checklist is a PMC document. The completed validation checklists are transmitted annually to the ARF as part of the PMC laboratory records.

However as far as changing the RMAED, Deb will send a letter to Bruce (email) with the results of the validation and instructions as to what qualifiers to change.

NOTE: Based on a follow-up question to Kathy on the phone, the instructions that Deb sends to Bruce are not retained by Deb. However, Kathy believes that Bruce retains these instructions. See follow-up interview with Bruce for additional information.

Question: How can a user determine what the reasons were for adding an 'R' to data in the RMAED?

Response: Per Bruce, there is a field in the RMAED called Loc_Comm_num that contains a sequential four-digit code. This code can be used to look up a short discussion of the reason that the data were rejected in another table called Chem Comm.

RVO Clarification: Manual entries in the loc_comm_num field now contain up to four-digits in this code. However the '0' code is automatically added by RTRAC to rejected data due to missed holding times. Currently, there are 328 records in chem_rec that contain the '0' code. Furthermore, the '1' code is automatically added to all other records that enter the RMAED via RTRAC. When data is auto-accepted after 45 days, the '1' code remains forever in the loc_comm_num field, unless data are changed according to human data review and validation. Approximately 5.5 million records contain the '1' code. These two automatic entries for loc_comm_num codes represent over 96 percent of all 5.7 million records in the chem_rec table.

Follow-up Document Review: May 11 and 12, 2010

Location: Building Z92, Rocky Mountain Arsenal

RVO Representative:

Deb Hosford, Kathy Weinel, PMC

Reviewer:

Bill Lutz, PWT for EPA

The RVO CQAP, PMC CQAP and PMC Environmental Data Validation Plan were reviewed. However, the PMC CQAP and PMC Data Validation Plan could only be reviewed in person, and these PMC plans are not in the ARF. However, is it unclear why these plans, which control how samples are analyzed, evaluated and reported are not part of the Administrative Record. This is especially problematical because the RVO CQAP, which is in the ARF has no discussion of the data validation program.

In the RVO CQAP, Section 5.11.6 specifically links the data assessment, qualification and documentation of laboratory results to the most recent editions of the EPA National Functional Guidelines for Data Review. However, the PMC CQAP only specifically references the PMC Environmental Data Validation Plan (and project specific QA plans) and does not discuss adherence to the EPA National Functional Guidelines. Therefore, it is unclear if the PMC CQAP and Data Validation Plan is consistent with the RVO CQAP requirements.

The PMC Data Validation Plan includes checklists for checking the data package. The checklists are comprehensive and have reasonable control levels that correspond closely to EPA functional guidelines. The checklists consist of yes/no boxes for the various validation criteria. However, there were no written actions in the PMC Data Validation Plan that correspond to actions identified in the EPA functional guidelines. As a result, it is unclear how the data qualifiers are applied based on the checklist results (the data qualifiers are not discussed in the Data Validation Plan). Instead, the qualifiers are applied primarily through "professional judgment". Therefore,

the Data Validation Plan does not provide prescriptive criteria that would insure that qualification of the data was consistent over the five-year period.

The RVO CQAP has a stand-alone section on the Analytical Laboratory Performance Evaluation System (ALPES) program for using PE samples for lab quality issue examination. However, the APLES program is not specifically discussed in the PMC CQAP. Therefore it is not clear how this program integrates with the other quality assessments performed by PMC at RMA. In addition, it was stated that the PE data are not stored electronically in the RMAED and it is unclear whether PE sample reports are prepared, or whether they are provided to the ARF.

Follow-up Interview Date: May 12, 2010

Location: Building 129, Rocky Mountain Arsenal

RVO Representative:

Bruce Fritz, Lab Database Manager, DPRA

Interviewer:

Steve Singer, PWT for EPA

Question: What does the RTRACK program do and can you show me an example of how it works?

Response: Per Bruce Fritz, the RTRACK program primarily checks to make sure that the EDD is formatted correctly. It primarily checks that the fields are filled out and are the right size, and checks that the values in certain fields are within the range specified by various lookup tables in the RTRACK database.

Question: Is the qualification of the data based on hold times the only analytical quality check that the RTRACK program performs?

Response; Per Bruce Fritz, yes.

Note: Bruce showed PWT how the program loaded preliminary data into the RMAED. Essentially, if he hits the upload button and nothing pops up on his screen the EDD loaded successfully.

Question: Are you ever asked to delete data from the database?

Response; Per Bruce Fritz, very rarely, and usually because PE data was loaded by mistake.

RVO Clarification: PMC sends a "blind" performance evaluation (PE) sample to the laboratory. This sample is mixed in with all the regular samples and the laboratory does not know it is a PE sample. The PE data is actually created and loaded by the laboratory into RMAED via the RTRAC program. After the PE data is in the RMAED, the PMC notifies the database manager to remove all PE sample data.

Question: Other than loading the lab data into the RMAED you are also responsible for making changes to the qualifier fields. How does that process work?

Response; Per Bruce Fritz, up until February 2007, Bruce would receive a word document that typically come from the Army chemist associated with the laboratory group. This letter would contain a list of Lot numbers and instructions for any qualifier changes that needed to be made. Bruce showed PWT an example of these letters. Bruce would attach a document number tag to each letter and would keep this letter in a file cabinet dedicated to these correspondences. Bruce would enter the reason code, the qualifier changes, and the reason comments from the letter into a table called QC_Letters. A program would use the information in this QC_Letters table to update both the Chem_Rec table and the Chem_Comm table in the RMAED.

Question: These letters that you received prior to February 2007. Do copies go to the ARF?

Response: Per Bruce, He doesn't believe they do. The file cabinet in his office contains all the original letters dating back 10 years. He does not know where the instructions before that time went. Note: PWT contacted Kelli Schneider at the ARF to see if these instruction letters were in the ARF. At the time of this writing no response has been received.

RVO Clarification: Bruce checked with Kelli. She has never received any of the QC letters. For all future letters, see "Proposed Change" after the RVO response to Observation 6 near the beginning of this document.

Question: So how does the notification process work now (post Feb. 2007)?

Response: Per Bruce, he receives emails with the instructions.

Question: Are these instructions in the same format as they were prior to Feb. 2007?

Response: Per Bruce, they are not in any consistent format.

Question: Do you print these instructions out, number them and file them like you did prior to Feb. 2007?

Response: Per Bruce, No. He believes that these recent instructions are only retained in his email inbox.

NOTE: Bruce showed PWT the comment field in the Chem_Comm table to get a feeling for what the instructions looked like. For comments prior to 2007, the comment letter number would often be included in the reason field for reference. Comments since that time only have a summary of the instruction letter but no letter number. The comments were summarized by Bruce based on the instructions sent to him but it was not clear that consistent elements from the instruction were applied.

PWT picked a comment code (1938) from the Chem_Comm Table at random and asked to see the instruction letter. The instruction letter was from Cecil Slaughter, USGS and dated 9/22/08. The instruction referred to some groundwater data for Well 36631 in Lot ULN, which had been automatically given an 'R' in the Rec_Loc_Flag field by the RTRACK program due to hold time exceedances. The instruction from Cecil indicated that Cecil had conferred with Bob Charles on whether the wells should be re-sampled and concluded that the resample was not warranted but that the rejected data be qualified as acceptable, and the 'R' replaced with an 'A'. However, there is no justification provided in the instruction for this re-qualification of the rejected data as acceptable.

Data Requests:

RVO Representative:

Kathy Weinel, PMC

Data Request Source:

Steve Singer, PWT for EPA

As a result of the interviews noted above, EPA submitted two information requests to the PMC lab group. In the first request, EPA provided a subset of data from the FYR period that had been qualified as rejected in the RMAED, to establish the process by which data can be rejected in the RMAED. EPA requested the backup documentation that resulted in this data being rejected. PMC provided a validation summary to EPA. Based on the PMC response, the following observations were made:

- PMC provided justification for all of the rejected data in the EPA submittal except one. The missing justification involved an instruction from URS rather than from the PMC, and resulted in rejection of DIMP data for some samples in data package WFJ. Based on subsequent discussion with PMC lab support staff, it appears that instructions to the RMAED with respect to altering the data qualifiers is not required to go through the laboratory support group. In addition, the RMA Database Manager implements the instructions from the various data users but does technically evaluate the instructions. Therefore, it is unclear whether there is a centralized approval authority for making changes to the database, and what technical qualifications are required for individuals that are currently authorizing changes.
- For the rejected data that PMC did include in their response, the PMC provided a narrative of the validation problems that led to rejection of the data. Though the narrative appears to provide adequate justification for rejection of the data in EPA's submittal, PMC did not provide the backup documentation as was requested by EPA. Therefore, it remains unclear how the results of the validation that resulted in the qualifier changes were documented.

EPA provided a second data set to PMC that involved tables from the RMA Operational Assessment Reports that covered FY2006, FY2007, and FY2008. EPA requested that the percent of the data that was validated from these tables be provided by PMC. This was important because the RVO had not provided data summary reports for these systems during the FYR period. The data sets were as follows:

- North of Basin F Intercept Data Listing: FY2008 Effluent (PAASEF)
- North Boundary Treatment Plant Data Listing: FY2007 Treatment Plant Influent (PNININ)
- Northwest Boundary Treatment Plant Data Listing: FY2006 Treatment Plant Effluent (PWEFEF)

The resulting validation percentages provided by PMC are:

• North of Basin F Intercept Data Listing: FY2008 Effluent (PAASEF): 37.5%

- North Boundary Treatment Plant Data Listing: FY2007 Treatment Plant Influent (PNININ): 61.4%
- Northwest Boundary Treatment Plant Data Listing: FY2006 Treatment Plant Effluent (PWEFEF) 54.5 %

The results provided by PMC for the three individual data sets indicate that the minimum requirement for 25% validation for these data sets was met.

Follow-up Document Review: Post Laboratory Water Quality Data Assessment Procedure

Location: N/A

RVO Representative: N/A

Reviewers:

Levi Todd, PWT for EPA Steve Singer, PWT for EPA Bill Lutz, PWT for EPA

Based on the interview results, the *Post Laboratory Water-Quality Data Assessment Procedure* (RVO SOP RVOP.014) dated 1/24/2007 was reviewed because it provides methodologies for qualifying data as rejected that lie outside of the PMC CQAP and PMC Environmental Data Validation plan.

The *Procedure* outlines a data assessment process by which "questionable" data are reviewed with respect to not only the quality of the data, but also with respect to the data relative to other data (statistical analysis), historical data (chronological trends), or other site characteristics (hydrogeological review). The *Procedure* relies heavily on the U.S. Environmental Protection Agency (EPA) guidance, *Data Quality Assessment: A Reviewer's Guide (DQA Guide)* (EPA 2006a), and *Data Quality Assessment: Statistical Methods for Practitioners (DQA Methods)* (EPA 2006b), which are both cited throughout the *Procedure*.

The data assessment process may be reasonable for project-specific or evaluation-specific efforts in which the data are being evaluated for a particular purpose, and for which the conclusions are applied only to that specific project. However, the *Procedure* appears to depart from typical practice by allowing the data user to qualify the analytical data in the Rocky Mountain Arsenal Environmental Database (RMAED) based on the overall data assessment process. The *Procedure* also appears to depart from the guidance, *DQA Guide*, in several significant respects.

The EPA data quality assessment process emphasizes the importance of the assessing the data in the context of project objectives. Examples of this emphasis include:

• the introduction to Data Quality Assessment contained on EPA's web page (www.epa.gov/quality/dqa) indicates that data quality assessment is used to assess the type, quantity, and quality of data in order to verify that the **planning objectives**, Quality Assurance Project Plan (QAPP) components, and sample collection procedures were satisfied and that the data are suitable for its [sic] intended purpose [emphasis added];

- the *DQA Guide* reiterates that data assessment is "The evaluation of environmental data to determine if they meet the **planning objectives** of the project, and thus are of the right type, quality, and quantity to support their intended use" [emphasis added];
- the *DQA Guide* also indicates that the first step in a data quality assessment is review of the project's objectives and sampling design;
- the *DQA Guide* indicates that if objectives have not been developed, then it is necessary to recreate some of the project's objectives prior to conducting the DQA; and
- the *DQA Guide* recommends the data quality objective (DQO) process for systematic planning.

The first step in the *Procedure* is "Review of the data set." However, the *Procedure* does not indicate that this is done with respect to the project's objectives, which should be identified as data quality objectives in the quality assurance project plan (QAPP) for the project, and whether the *Procedure* will meet the project's or task's objectives.

Also, the first step of the *Procedure* involving data review includes a plot of the data versus time, as well as review of the data package and quality assurance (QA)/quality control (QC) information. The second step in the *Procedure* is evaluation of QC sample results. The distinction between the review of QA/QC information between the first and second steps is unclear, but regardless, it appears that some level of data review is conducted before review of QA/QC information. Conversely, the *DQA Guide* describes the data life cycle in the context of a quality assurance assessment, of which the data quality assessment is a part. The *DQA Guide* indicates that data quality assessment only occurs after the data have been verified and validated, and that this verified/validated data is an input to the data quality assessment.

The *Procedure* allows for the use of statistical, chronological, or hydrogeologic criteria (i.e., criteria other than verification/validation criteria) to qualify and reject data in the RMAED, and, in addition, does not appear to have any requirements for distinguishing between data rejected as a result of verification/validation or as a result of a data quality assessment. The qualification of data in the RMAED as a result of the data assessment process appears to be inconsistent with the *DQA Guide*. Figure 0-1 in this guidance shows that an <u>input</u> into the data quality assessment is verified/validated data, and the <u>output</u> is project conclusions.

The data assessment process is not transparent with respect to the details that might result in qualification of the data, which creates the potential for subjective, rather than objective, review of the data. For example, Section 6.4.5 discusses the chronological review of water quality data, and indicates that this evaluation may be performed even if outliers were not identified by the outlier tests. It is therefore not clear what criteria are used to determine if the data are anomalous. While lack of specificity is in some sense a natural aspect of a data assessment process, when the potential end result is data qualification in the RMAED rather than limited application of the conclusions to the specific task or project, the potential pitfalls are raised to a level such that additional specificity, safeguards, or oversight are warranted for the process.

Additional issues regarding the *Procedure* that results in the end point of data qualification in the RMAED include:

- Evaluation of only "questionable" data, rather than a non-biased, objective evaluation of all data, or a data subset, and an emphasis on data in the Method Reporting Limit range, which raises further concerns with respect to the objectivity of the data assessment and qualification of the data;
- Use of results from an <u>evaluation-specific</u> data assessment to qualify original data, which ignores the possibility that the data may be valid from an analytical QA/QC perspective, and therefore, may potentially be useful for other evaluations or purposes;
- Qualifications are not required for the "data user" that conducts the data assessment, including any data verification/validation efforts;
- Historic data in the database prior to promulgation of the *Procedure* (January 2007) can be reassessed by the Procedure;
- The SOP does not appear to allow for oversight or participation by the Regulatory Agencies in the data assessment process; and
- There are provisions in the *Procedure* to change "R" flags, if data collected subsequent to the data previously qualified, should indicate that the previously qualified data should not have been qualified. This provision could allow data qualified by one procedure (i.e. data validation) to be overwritten with the results of this *Procedure*. It also suggests that the results of the data validation may only be temporary and subject to whatever data set is most recent or being reviewed in the future.

In conclusion, the Post-Laboratory Procedure tends to obscure the line between data evaluation for the purpose of data quality and validity and data evaluation for the purpose of data usability. In addition, it is not clear from the Procedure that data validation needs to be performed before initiating the post laboratory validation process. The Procedure should only be applied as a means of assessing data usability for the intended purpose outlined in a project SAP or QAPP. To this end, the use of the 'Z' qualifier in the Data_Qual field in the Chem_Rec table, as an indication of data usability, is acceptable. However, the use of the Procedure to qualify data as rejected (in the Rec_Loc_Flag field) should not be done if the results of the data validation process do not indicate that the data is of unacceptable quality.

References:

Environmental Protection Agency (EPA)

2006a Data Quality Assessment: A Reviewer's Guide

2006b Data Quality Assessment: Statistical Methods for Practitioners.

Program Management Contractor (PMC).

2007 Chemical Quality Assurance Plan. Rev. 4. October.

2006 Environmental Data Validation Plan. January.

Remediation Venture Office. (RVO).

2009 Chemical Quality Assurance Plan. Rev. 4. January.

2007 Post Laboratory Water-Quality Data Assessment Procedure. January.

TAB A COMPLEX TRENCHES

Five-Year Review Site Inspection Checklist

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

| I. SITE INFORMATION | | | | | |
|---|-----------------------------|--|--|--|--|
| Site name: Complex - Trenches system Date of inspection: April 27, 2010 | | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) X Landfill cover/containment Access controls Institutional controls Groundwater pump and treatment Surface water collection and treatment Other | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS (| | | | | |
| 1. O&M site manager Rick Beards Name Interviewed at site at office by phone Phone me Problems, suggestions; Report attached | Title Date | | | | |
| Name Interviewed at site at office by phone Phone n Problems, suggestions; Report attached | Title Date | | | | |
| 3 | | | | | |

| 3. | Local regulatory authorities and response a office, police department, office of public healt deeds, or other city and county offices, etc.) Fi | th or environmental. | nd Tribal offices, en health, zoning offic | mergency response e, recorder of |
|----|---|----------------------|---|-------------------------------------|
| | Agency | | | |
| | Contact | | | |
| | ContactName | Title | Date | Phone no. |
| | Problems; suggestions; Report attached | | | |
| | Agency | | | |
| | ContactName | Title | Date | Phone no. |
| | Problems; suggestions; Report attached | | | |
| | Agency | | | |
| | ContactName | Title | Date | Phone no. |
| | Problems; suggestions; Report attached | | | |
| | Agency | | | |
| | ContactName | Title | Date | Phone no. |
| | Problems; suggestions; Report attached | | | |
| 4. | Other interviews (optional) Report attached | i. a | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTIONA | L CONTROLS | Applicable N/A | A . |
| _ | Fencing | E2 | = | |
| A. | | | | N/A |
| 1. | Remarks Complet Truches St. | is within | In lequeted | Cover |
| D | Other Access Restrictions | | | |
| Б. | | v | | |
| 1. | Signs and other security measures Remarks Signs are Olilisyum 1 4 900 Cana Hori | Location shown on s | site map N/A | auch is |
| | | | | |

| C. | Institutional Controls (ICs) | | | |
|----|---|------------|----------|------------|
| 1. | Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced Type of monitoring (e.g., self-reporting, drive by) Frequency | | | |
| | Frequency | Date | | Phone no. |
| * | Reporting is up-to-date Reports are verified by the lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in deed or decision documents have been met Violations have been reported Other problems or suggestions: Report attached | Yes Yes | No No | N/A N/A |
| | | | | |
| 2. | Adequacy ICs are adequate ICs are inadequate ICs are inadequate | | | N/A |
| D. | General | | | |
| 1. | Vandalism/trespassing Location shown on site map No va Remarks | | vident | |
| 2. | Land use changes on site N/A Remarks In Am Maintaine Apar | | | |
| 3. | Land use changes off site N/A Remarks | | | |
| | | | | |
| | VI. GENERAL SITE CONDITIONS | | | |
| A. | Roads Applicable N/A | | | |
| 1. | Roads damaged Location shown on site map Roads Remarks | adequate | > | N/A |

| B. O | other Site Conditions |
|------|--|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks on only of my ling good condition - was estended dury cover construction. Electrical butes have covers and in ok condition |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| C. T | reatment System Applicable (N/A) See BASIN A Nech INSYECTION |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| | Additive (e.g., chelation agent, flocculent) |
| | Others Good condition Needs Maintenance Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date Equipment properly identified |
| | and archemant land Land. |
| | Quantity of groundwater treated annually Quantity of surface water treated annually |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks See Basin A Neck in Spection |
|----|---|
| 3. | Tanks, Vaults, Storage Vessels NA Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances NA Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks In spectral well = 36305 - Extraction well clustering Congret Treatment - well in good Candition, well marked appropriately - well was extended during court construction and we signs of settling observed well 36210 15 a water level will the inside of Slurg wall, well is in good condition and marked adequately |
| | adequately |

| XI. OVERALL OBSERVATIONS | | | | |
|--------------------------|--|--|--|--|
| Α. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The secled Complet Trenche Monitoria, and designed. The wells wells were observed by he in | | | |
| В. | Adequacy of O&M | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |

Five-Year Review Site Inspection Checklist

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

| Trong Complex Treach | | | | |
|---|------------------------------------|--|--|--|
| I. SITE INFORMATION | | | | |
| Site name: On-Post Groundwater Monitoring Wells | Date of inspection: April 28, 2010 | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X OtherOn-post groundwater monitoring wells, including wells associated with ELF, Basin F, North Plants, Complex Trenches, Shell Trenches, Groundwater Mass Removal and Lime Basins project areas, and the Bison Pilot Area | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | |
| II. INTERVIEWS (Check all that apply) | | | | |
| 1. O&M site manager | | | | |
| Name Title Date Interviewed at site at office by phone Phone no Problems, suggestions; Report attached | | | | |
| 2. O&M staff | | | | |
| Name | Title Date | | | |
| | | | | |

| 3. | office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|----|---|-------------------|----------------|--------------------------------|--|
| | Agency COPHE Contact Ken Vagler Name Problems: suggestions: Peropt attached | Engineer Title | 4 27 6 Date | 3 <u>691-3383</u> Phone no. | |
| | Problems; suggestions; Report attached _ | III OH | | | |
| | Agency Contact Name | Title | Date | Phone no. | |
| | Problems; suggestions; Report attached _ | | | | |
| | Agency | | | | |
| | Name Problems; suggestions; Report attached _ | Title | Date | Phone no. | |
| | Agency Contact Name | Title | Date | Phone no. | |
| | Problems; suggestions; Report attached | 1100 | | | |
| 4. | Other interviews (optional) Report attac | hed. | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | V. ACCESS AND INSTITUTIO | NAL CONTROLS | Applicable 1 | N/A | |
| Α. | Fencing | | | | |
| 1. | Fencing damaged Location shows Remarks | | Gates secured | N/A | |
| B. | Other Access Restrictions | | | | |
| 1. | Signs and other security measures Remarks | Location shown o | n site map 1 | N/A | |

| C. Institutional Controls (ICs) | | | | | | | | |
|---------------------------------|---|-----------------------|---------|------------------------|----------|------------|--|--|
| 1. | Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced Type of monitoring (e.g., self-reporting, drive by) Frequency | | | | No No | N/A N/A | | |
| | Responsible party/agency | | | | | | | |
| | Contact Name | Title | | Date | | Phone no. | | |
| | Reporting is up-to-date Reports are verified by the | lead agency | | Yes Yes | No No | N/A N/A | | |
| | Specific requirements in de Violations have been report Other problems or suggestion | ed | | et Yes Yes | No No | N/A N/A | | |
| 2. | Adequacy Remarks | ICs are adequate | | ICs are inadequate N/A | | | | |
| D. Ger | neral | | | | | | | |
| 1. | Vandalism/trespassing Remarks | Location shown on sit | e map N | lo vandalism ev | vident | | | |
| 2. | Land use changes on site Remarks_ | N/A | | | | | | |
| 3. | Land use changes off site Remarks | N/A | | | | | | |

| VI. GENERAL SITE CONDITIONS | | | | | | | |
|-----------------------------|------------------|----------------------------|----------------|-----|--|--|--|
| A. Roads Applicable | | N/A | | | | | |
| 1. Roads | s damaged rks | Location shown on site map | Roads adequate | N/A | | | |

| | Domorto | | | | | |
|-------|--|---|--|--|--|--|
| | Remarks | | | | | |
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| | IX. GROUNDWA | ATER/SURFACE WATER REMEDIES Applicable N/A | | | | |
| | | W.H. D Audicalia N/A | | | | |
| A. G | roundwater Extraction v | Vells, Pumps, and Pipelines Applicable N/A | | | | |
| 1. | Pumps, Wellhead Plu | | | | | |
| | Good condition All required wells properly operating Needs Maintenance N/A | | | | | |
| | Remarks | | | | | |
| | | | | | | |
| | Enter Alian Contam Dia | alines Value Value Pares and Other Angustoneses | | | | |
| 2. | | pelines, Valves, Valve Boxes, and Other Appurtenances | | | | |
| | Good condition Needs Maintenance Remarks | | | | | |
| | | | | | | |
| 3. | Spare Parts and Equi | oment | | | | |
| ٠. | | Good condition Requires upgrade Needs to be provided | | | | |
| | | 1 | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| C. Tr | eatment System | Applicable N/A | | | | |
| 1. | Treatment Train (Che | ck components that apply) | | | | |
| •• | Metals removal | Oil/water separation Bioremediation | | | | |
| | | Carbon adsorbers | | | | |
| | Filters | | | | | |
| | Additive (e.g., chelati | ion agent, flocculent) | | | | |
| | Others | | | | | |
| | Good condition | Needs Maintenance | | | | |
| | Sampling ports properly marked and functional | | | | | |
| | Sampling/maintenance log displayed and up to date | | | | | |
| | Equipment properly i | | | | | |
| | Quantity of groundwa | ater treated annually | | | | |
| | | ater treated annually | | | | |
| | | | | | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) | | | |
|----|--|--------------|--|--|
| • | N/A Good condition Needs Maintenance | | | |
| | Remarks | - | | |
| 3. | Tanks, Vaults, Storage Vessels | - | | |
| | N/A Good condition Proper secondary containment Needs Maintenance Remarks | - | | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | - | | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | <u>-</u> | | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks | - | | |

| XI. OVERALL OBSERVATIONS | | | | |
|--------------------------|--|--|--|--|
| A. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | |
| | | | | |
| | | | | |
| В. | Adequacy of O&M | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |

| I. SITE INFORMATION | | | | | | |
|---|------------------------|--|--|--|--|--|
| Site name: On-Post Groundwater Monitoring Wells Date of inspection: April 28, 2010 | | | | | | |
| Location and Region: RMA Region VIII EPA ID: C05210020769 | | | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X Other On-post groundwater monitoring wells, including wells associated with ELF, Basin F, North Plants Complex Trenches, Shell Trenches, Groundwater Mass Removal and Lime Basins project areas, and the Bison Pilot Area | | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | | |
| II. INTERVIEWS | (Check all that apply) | | | | | |
| 1. O&M site manager Name Title Date Interviewed at site at office by phone Phone no Problems, suggestions; Report attached | | | | | | |
| 2. O&M staff Title Date | | | | | | |
| Interviewed at site at office by phone Phone no Problems, suggestions; Report attached | | | | | | |
| | | | | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|--------|--|------------------|------------------------|-----------|--|
| | Agency TCHD Contact Vincent Stewart Name Problems; suggestions; Report attached | | <u>4/27/10</u> Date | Phone no. | |
| | Agency Contact Name Problems; suggestions; Report attached | litle | Date | Phone no. | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | | |
| 4. | Other interviews (optional) Report attach | ed. | | | |
| | | | | | |
| | | | | | |
| | V. ACCESS AND INSTITUTION | IAL CONTROLS | Applicable N/ | A | |
| A. Fen | icing | | | | |
| 1. | Fencing damaged Location shown Remarks | on site map | Gates secured | N/A | |
| B. Oth | ner Access Restrictions | | | | |
| 1. | Signs and other security measures Remarks | Location shown o | on site map N/. | A | |

| C. Institutional Controls (ICs) | | | |
|--|------------|----------|------------|
| 1. Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced | Yes Yes | No No | N/A N/A |
| Type of monitoring (e.g., self-reporting, drive by) Frequency Possensible portriogeness | | | |
| Responsible party/agency Contact | | | |
| Name Title | Date | | Phone no. |
| Reporting is up-to-date Reports are verified by the lead agency | Yes Yes | No No | N/A N/A |
| Specific requirements in deed or decision documents have been met Violations have been reported Other problems or suggestions: Report attached | Yes Yes | No No | N/A N/A |
| Adequacy ICs are adequate ICs are inadequal Remarks | ıate | | N/A |
| D. General | | | |
| 1. Vandalism/trespassing Location shown on site map No var Remarks | ndalism e | vident | |
| 2. Land use changes on site N/A Remarks | | | |
| 3. Land use changes off site N/A Remarks | | | |
| VI. GENERAL SITE CONDITIONS | | | |

| | | VI. GENERAL SITE CONDI | TIONS | |
|----------|------------|----------------------------|----------------|---------|
| A. Roads | Applicable | N/A | | - 0.001 |
| 1. Roads | damaged | Location shown on site map | Roads adequate | N/A |

| | Remarks |
|----|---|
| | Tollars |
| | |
| | |
| | |
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| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| | |
| | 37/4 |
| Gı | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| | Pumps, Wellhead Plumbing, and Electrical |
| | Good condition All required wells properly operating Needs Maintenance N/A |
| | Remarks 36305 - Franchion well near road, pour box 15 |
| | =100 rande Wat will |
| | |
| | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances |
| | Good condition Needs Maintenance |
| | Domonto |
| | Remarks |
| | |
| | Spare Parts and Equipment Partial Parts and Equipment |
| | Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| | i Cindiks |
| | Remarks |
| | Remarks |
| | |
| Tr | reatment System Applicable NA |
| Tr | |
| Tr | reatment System Applicable N/A Treatment Train (Check components that apply) |
| Tr | reatment System Applicable NA Treatment Train (Check components that apply) |
| Tr | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| Tr | Treatment Train (Check components that apply) Metals removal Air stripping Carbon adsorbers |
| Tr | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others |
| Tr | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance |
| Tr | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional |
| Tr | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date |
| Tr | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified |
| Tr | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually |
| Tr | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified |

| 2. | Electrical Enclosures and Panels (properly rated and functional) | | | | |
|----|---|--|--|--|--|
| | N/A Good condition Needs Maintenance | | | | |
| | Remarks | | | | |
| 3. | Tanks, Vaults, Storage Vessels | | | | |
| | N/A Good condition Proper secondary containment Needs Maintenance Remarks | | | | |
| 4. | Discharge Structure and Appurtenances | | | | |
| | N/A Good condition Needs Maintenance Remarks | | | | |
| 5. | Treatment Building(s) | | | | |
| | N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks | | | | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition | | | | |
| | All required wells located Needs Maintenance N/A Remarks 36209 - One of pured wells inside trench | | | | |

| | XI. OVERALL OBSERVATIONS |
|----|---|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

TAB B SHELL TRENCHES

| I. SITE INFORMATION | | | | | |
|---|-----------------------|--|--|--|--|
| Site name: Shell Trenches Sharry Wall Date of inspection: April 27, 2010 | | | | | |
| Location and Region: RMA Region VIII EPA ID: C05210020769 | | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Access controls Institutional controls Groundwater pump and treatment Surface water collection and treatment Other | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS (| Check all that apply) | | | | |
| 1. O&M site manager Rick Books Lee Name Interviewed at site at office by phone Phone r Problems, suggestions; Report attached | | | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone n Problems, suggestions; Report attached | Title Date | | | | |
| | .2 | | | | |

| 3. | office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | |
|---------|---|------------------------|------------------------|-----------------------|
| | Agency Euviron menta Protect Contact Ron Bertran Name Problems; suggestions; Report attached | | <u>4/27/10</u> Date | 312-6061 Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | | Date | Phone no. |
| | Agency | | Date | Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | | Date | |
| 4. | Other interviews (optional) Report attache | ed. | | |
| | | | | |
| | | | | |
| | | A COMPOSE A | | · |
| | V. ACCESS AND INSTITUTION | AL CONTROLS A | pplicable N/ | A |
| A. Fend | Fencing damaged Location shown Remarks Shull Trevelus Shu Cover Fevre | on site map Gate | s secured LIHIN FL | a fegra hed |
| B. Oth | er Access Restrictions | | | |
| 1. | Signs and other security measures Remarks Warmy Signs on | Location shown on site | e map N/ | A |

| C. Inst | titutional Controls (ICs) | | | | |
|--------------|--|----------------------------------|------------|-------------|------------|
| 1. | Implementation and enf Site conditions imply ICs Site conditions imply ICs | not properly implemented | Yes Yes | No No | N/A N/A |
| | Frequency | self-reporting, drive by) | | | |
| | Responsible party/agency | | | | |
| | ContactName | Title | Date | | Phone no. |
| | Reporting is up-to-date Reports are verified by the | e lead agency | Yes Yes | No No | N/A N/A |
| | Violations have been repo | | Yes Yes | No No | N/A N/A |
| | Other problems or sugges | tions: Report attached | | | |
| 2. | Adequacy Remarks | ICs are adequate ICs are inadeq | | | N/A |
| D. Gen | eral | | | = | |
| 1. | | Location shown on site map No va | ndalism e | | |
| 2. | Land use changes on site Remarks | | | | |
| 3. | Land use changes off site Remarks | · WA | | | |
| | | | | | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| A. Roa | ds Applicable | N/A | | | |
| 1. | Roads damaged Remarks | Location shown on site map Roads | adequate | ر | N/A |

| B. Other Site Conditions | |
|---|--|
| Remarks | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A | |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A | |
| 1. Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks | |
| | |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks | |
| 3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks_ | |
| | |
| C. Treatment System Applicable N/A | |
| Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters | |
| Additive (e.g., chelation agent, flocculent) Others | |
| Good condition Needs Maintenance | |
| Sampling ports properly marked and functional | |
| Sampling/maintenance log displayed and up to date | |
| Equipment properly identified Quantity of groundwater treated annually | |
| Quantity of groundwater treated annually Quantity of surface water treated annually | |
| Remarks | |
| | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) (N/A) Good condition Needs Maintenance |
|---------|---|
| | Remarks Good condition Needs Maintenance |
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance Remarks Inspect J Well 36226 and 36535, which are water level monitoring well 5. Well 36226 Monitorst browled gradient and outside the Story wall, and well 36535 Monitors inside Sway wall on the south east |
| thest C | brokep gradient and outside the Slurry wall, and well |
| | 36535 monitoris inside strong wall on the south east |
| 7 | Server. |

| XI. OVERALL OBSERVATIONS | | | |
|--------------------------|--|--|--|
| A. | Implementation of the Remedy | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The specked the monthormy wells at the french the wells were found to be in acceptable. Cornel the | | |
| В. | Adequacy of O&M | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | |

| I. SITE INFO | ORMATION | | | |
|---|-----------------------------|--|--|--|
| Site name: On-Post Groundwater Monitoring Wells Date of inspection: April 28, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X OtherOn-post groundwater monitoring wells, including wells associated with ELF, Basin F, North Plants, Complex Trenches, Shell Trenches, Groundwater Mass Removal and Lime Basins project areas, and the Bison Pilot Area | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | |
| II. INTERVIEWS (| Check all that apply) | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone reproblems, suggestions; Report attached | Title Date | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | |
|----|--|----------------|---|-------------------------|
| | Agency COPHE Contact Ken Vogler Name Problems: suggestions: Report attached | Engineer | 4/27/10 Date | 3 692-3385 Phone no. |
| | Problems; suggestions; Report attached | th ok | | |
| | Agency ContactName | | | |
| i | Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency | | | |
| | ContactName Problems; suggestions; Report attached | | | Phone no. |
| | Agency Contact Name | | | |
| : | Name Problems; suggestions; Report attached | | Date | Phone no. |
| 4. | Other interviews (optional) Report attach | ed. | | |
| | | | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTION | AL CONTROLS | S Applicable N | /A |
| A. | Fencing | | | |
| 1. | Fencing damaged Location shown Remarks_ | on site map | Gates secured | N/A |
| В. | Other Access Restrictions | | 47 MANAGEMENT (18 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | |
| 1. | Signs and other security measures Remarks | Location shown | on site map N | /A |
| | | | | |

| C. In | stitutional Controls (ICs) | | •• | | | | |
|-------|--|---|----------------|------------|---------------|------------|--------------|
| 1. | Implementation and enformation Site conditions imply ICs in Site conditions imply ICs in Type of monitoring (e.g., see | ot properly implemente ot being fully enforced | | Yes Yes | No No | N/A N/A | |
| | Frequency | | | | | | - - - |
| | ContactName | Т | itle | Date | - | Phone no. | - |
| | Reporting is up-to-date Reports are verified by the | lead agency | | Yes Yes | No No | N/A N/A | |
| | Specific requirements in de Violations have been report Other problems or suggestion | ted | | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy Remarks | ICs are adequate | ICs are inaded | quate | | N/A | |
| D. Ge | neral | | | | | | ··· <u>-</u> |
| 1. | Vandalism/trespassing Remarks | Location shown on sit | | andalism e | vident | | |
| 2. | Land use changes on site Remarks | | | | | | |
| 3. | Land use changes off site Remarks | N/A | | | | | |
| | | | | | | | |

| | | VI. GENERAL SITE CONDI | TIONS | |
|----------|--------------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| 1. Roa | ds damaged arks | Location shown on site map | Roads adequate | N/A |

| | Other Site Conditions |
|------|--|
| | Remarks |
| | |
| | |
| | |
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| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| | |
| 1. G | Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| | Pumps, Wellhead Plumbing, and Electrical |
| | Good condition All required wells properly operating Needs Maintenance N/A |
| | Remarks |
| | |
| | Potential Control District Value Value Description of Other Association |
| | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance |
| | Remarks |
| | |
| | Spare Parts and Equipment |
| | Readily available Good condition Requires upgrade Needs to be provided |
| | Remarks |
| | |
| | |
| 3 00 | N 4 9 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |
| . 1 | reatment System Applicable N/A |
| | Treatment Train (Check components that apply) |
| | Metals removal Oil/water separation Bioremediation |
| | Air stripping Carbon adsorbers |
| | Filters |
| | Additive (a a chalation agent floagulant) |
| | Additive (e.g., chelation agent, flocculent) |
| | Others |
| | Others Good condition Needs Maintenance |
| | Others |
| | Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified |
| | Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually |
| | Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | | |
|----|---|-----------------------|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Remarks | Needs Maintenance | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | Needs repair | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled All required wells located Needs Maintenance Remarks | Good condition N/A | |

| | XI. OVERALL OBSERVATIONS | | | |
|----|--|--|--|--|
| A. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | |
| | | | | |
| | | | | |
| В. | Adequacy of O&M | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |

| I. SITE INFO | ORMATION | | | |
|--|-----------------------------|--|--|--|
| Site name: On-Post Groundwater Monitoring Wells Date of inspection: April 28, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X Other On-post groundwater monitoring wells, including wells associated with ELF, Basin F, North Plants, Complex Trenches, Shell Trenches, Groundwater Mass Removal and Lime Basins project areas, and the Bison Pilot Area | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | |
| II. INTERVIEWS (| Check all that apply) | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone problems, suggestions; Report attached | Title Date | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone in Problems, suggestions; Report attached | Title Date | | | |

| | Agency 1CHD | | | |
|---|---|--------------|---------------|-------------|
| | Contact Vincent Stewart | EHS | 4/27/10 | 720-322-152 |
| | Agency TCHD Contact Vincent Stewart Name | Title | Date | Phone no. |
| | Problems; suggestions; Report attached | | | |
| | Agency | | | |
| | ContactName | | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency | | | |
| | ContactName | Title | Date | Phone no. |
| | Problems; suggestions; Report attached | | | |
| | AgencyContact | | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | | | | |
| | Other interviews (optional) Report attached | ed. | | |
| | | ed. | | |
| | | | Applicable N/ | A |
| F | Other interviews (optional) Report attached | | Applicable N/ | A |
| F | Other interviews (optional) Report attached to the second | IAL CONTROLS | Applicable N/ | A N/A |
| | Other interviews (optional) Report attached v. ACCESS AND INSTITUTION encing Fencing damaged Location shown | IAL CONTROLS | | |

. 1

| C. | C. Institutional Controls (ICs) | | | | |
|----|--|------------------------|----------|------------|--|
| 1. | . Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced | Yes Yes | No No | N/A N/A | |
| | Type of monitoring (e.g., self-reporting, drive by) Frequency Responsible party/agency | | | | |
| | Contact | | | | |
| | Name Title | Date | e | Phone no. | |
| | Reporting is up-to-date Reports are verified by the lead agency | Yes Yes | No No | N/A N/A | |
| | Specific requirements in deed or decision documents have Violations have been reported Other problems or suggestions: Report attached | ve been met Yes Yes | No No | N/A N/A | |
| 2. | 1 | ICs are inadequate | | N/A | |
| | Remarks | | | | |
| D. | . General | | | | |
| 1. | Vandalism/trespassing Location shown on site mag Remarks | p No vandalism e | vident | | |
| 2. | Land use changes on site N/A Remarks | | | | |
| 3. | Land use changes off site N/A Remarks | | | | |
| | VI. GENERAL SITE CO | NDITIONS | | | |
| A. | . Roads Applicable N/A | 023 | | | |
| 1. | Roads damaged Location shown on site man | p Roads adequate | | N/A | |

Remarks___

| B. Ot | er Site Conditions | |
|-------|---|---|
| | Remarks | |
| | | _ |
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| | | _ |
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| | | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A | |
| A. Gr | oundwater Extraction Wells, Pumps, and Pipelines Applicable | |
| 1. | Pumps, Wellhead Plumbing, and Electrical | |
| | Good condition All required wells properly operating Needs Maintenance N/A | |
| | Remarks | _ |
| | | _ |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances | |
| | Good condition Needs Maintenance | |
| | Remarks | _ |
| | | - |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided | |
| | Remarks Remarks | |
| | | _ |
| | | |
| C Tr | atment System Applicable N/A | |
| | | |
| 1. | Treatment Train (Check components that apply) | |
| | Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers | |
| | Filters Caroon adsorbers | |
| | Additive (e.g., chelation agent, flocculent) | |
| | Others | |
| | Good condition Needs Maintenance | |
| | Sampling ports properly marked and functional | |
| | Sampling/maintenance log displayed and up to date | |
| | Equipment properly identified Quantity of groundwater treated annually | |
| | Quantity of groundwater treated annually | |
| | Remarks | _ |
| | | _ |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance | | | | |
|----|--|--|--|--|--|
| | Remarks | eds Maintenance | | | |
| 3. | Tanks, Vaults, Storage Vessels | | | | |
| | N/A Good condition Pro | oper secondary containment Needs Maintenance | | | |
| 4. | Discharge Structure and Appurtenance | | | | |
| | N/A Good condition Ne Remarks | | | | |
| 5. | Treatment Building(s) | | | | |
| | N/A Good condition (esp. Chemicals and equipment properly stor Remarks | red | | | |
| 6. | Monitoring Wells (pump and treatment and Properly secured/locked Functioning All required wells located New New Yorks 26,226, 26,635 | Routinely sampled Good condition | | | |
| | Remarks 36226, 36535 catale shory wall inside chary w | vall | | | |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

TAB C ELF AND HWL

| I. SITE INFORMATION | | | | |
|--|-----------------------------------|--|--|--|
| Site name: ELF & HWL Monitoring | Date of inspection: April 28,2010 | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | |
| Remedy Includes: (Check all that apply) X Landfill cover/containment Access controls Institutional controls Groundwater pump and treatment X Surface water collection and treatment Other | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | |
| II. INTERVIEWS (| Check all that apply) | | | |
| 1. O&M site manager R ch Beard \(\) Name Interviewed at site at office by phone Phone n Problems, suggestions; Report attached | Title Date | | | |
| 2. O&M staff | | | | |
| | | | | |

| 3 | office, police department, office of public hea | lth or environmental he | alth, zoning offic | e, recorder of |
|----|--|-------------------------|--------------------|----------------|
| | Agency Encrowmodal Protect Contact Ren Bertram Name Problems association Report attached | in Agency | 4/28/10 | 212-6061 |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency Contact Name | Title | | Phone no. |
| | Problems; suggestions; Report attached | | | |
| | AgencyContact | | | |
| | ContactName Problems; suggestions; Report attached | | Date | Phone no. |
| | Agency Contact Name | | | |
| | Name Problems; suggestions; Report attached | | Date | Phone no. |
| 4. | Other interviews (optional) Report attache | ed. | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTION | AL CONTROLS A | applicable N/A | 4 |
| A. | Fencing | | | |
| 1. | Fencing damaged Location shown of Remarks | on site map Gate | es secured | N/A |
| В. | Other Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown on sit | e map N/A | <u>(i)</u> |
| | | | | |

| C. Ins | titutional Controls (ICs) | | | | |
|--------|---|----------------------------------|------------|----------|------------|
| 1. | Implementation and enf Site conditions imply ICs Site conditions imply ICs | not properly implemented | Yes Yes | No No | N/A N/A |
| | | self-reporting, drive by) | | | |
| | Responsible party/agency | | | | |
| | Contact | | D-4 | | Dhamama |
| | Name | Title | Date | 2 | Phone no. |
| | Reporting is up-to-date Reports are verified by the | e lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in c Violations have been repo Other problems or sugges | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy Remarks_ | ICs are adequate ICs are inadequ | | | N/A |
| D. Ger | | | | | |
| 1. | | Location shown on site map No va | ndalism (| evident | |
| 2. | Land use changes on site Remarks TM | M/A Mandamed Area | | | |
| 3. | Land use changes off site Remarks_ | | | | |
| | | | | | |
| | | VI. GENERAL SITE CONDITIONS | | | *. |
| A. Roa | nds Applicable | N/A | | | |
| 1. | Roads damaged Remarks | | adequate | <u>ک</u> | N/A |

| 3. Other Site Conditions |
|--|
| Remarks |
| |
| |
| |
| |
| |
| |
| IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance NA Remarks |
| Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| . Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| |
| C. Treatment System Applicable N/A |
| . Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| Additive (e.g., chelation agent, flocculent) Others |
| Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date |
| Equipment properly identified |
| Quantity of groundwater treated annually Quantity of surface water treated annually |
| Quantity of surface water treated annually Remarks |
| |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|----|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning (Routinely sampled) Good condition (All required wells located) Needs Maintenance N/A Remarks Puspeated Monitoring wells 26099 and 25002 which are monitory well for the ELF. Book wells wells with Pads, protection casing, cafe are well come in place. Well ID tays in fact. |
| | In Speeded HUC Monitoring wells 25203 and 25102. Both wells were in acceptable Cardihing with cap/cours, Casing an Pads in fact. well #D 15 on inside of cop at well 25203. |

| | XI. OVERALL OBSERVATIONS |
|----|---|
| Α. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The spectran consider of inspecting Sielected wonitoring wells for the ECF are 14 well the condition was acceptable. |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

TRICOUNTY HEALTH

OSWER No. 9355.7-03B-P

Five-Year Review Site Inspection Checklist

| I. SITE INFO | ORMATION ELF | | | |
|--|------------------------------------|--|--|--|
| Site name: On-Post Groundwater Monitoring Wells | Date of inspection: April 28, 2010 | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO Weather/temperature: 75°F, 30 mph steady clear P closes | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X Other On-post groundwater monitoring wells, including wells associated with ELF, Basin F, North Plants, Complex Trenches, Shell Trenches, Groundwater Mass Removal and Lime Basins project areas, and the Bison Pilot Area | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | |
| II. INTERVIEWS | (Check all that apply) | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date no | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | no | | | |

| 3. | Local regulatory authorities and response office, police department, office of public hedeeds, or other city and county offices, etc.) | ealth or environmental | and Tribal offices, health, zoning off | emergency response ice, recorder of |
|-------------|--|------------------------|---|--|
| | Agency TCHS Contact Tom K NAME Name Problems: suggestions: Report attached | ENV SpeciAci | rst 4/28/10 | 120-322-1522 |
| | Name Problems; suggestions; Report attached | Title | / Date | Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | Title | | Phone no. |
| | Agency | | | |
| | ContactName Problems; suggestions; Report attached _ | | Date | |
| | Agency Contact Name | Title | Date | |
| 4. | Problems; suggestions; Report attached Other interviews (optional) Report attac | | | |
| | Other interviews (optional) Report attac | | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTIO | NAL CONTROLS | Applicable N | J/A |
| A.] | Fencing | | | |
| 1. | Fencing damaged Location show. Remarks USENS WONTHIN RMA | | Gates secured | N/A |
| В. (| Other Access Restrictions | | | |
| 1. | Signs and other security measures Remarks <u>WEII DESIGNATION ON</u> Access to wells ok. | Location shown on | • | V/A |

| C. Institutional Controls (ICs) | | | | |
|--|--|-------------|----------|------------|
| | ot properly implemented ot being fully enforced elf-reporting, drive by) | | | N/A N/A |
| Responsible party/agency Contact | | | | |
| Name | Title | Date | е | Phone no. |
| Reporting is up-to-date Reports are verified by the | lead agency | Yes Yes | No No | N/A N/A |
| Specific requirements in de Violations have been report Other problems or suggestion | | Yes Yes | No No | N/A N/A |
| 2. Adequacy Remarks | ICs are adequate ICs are inade | equate | | €N/A) |
| D. General | | | | |
| 1. Vandalism/trespassing | Location shown on site map No | vandalism (| evident | |
| 2. Land use changes on site Remarks | N/A | | | |
| 3. Land use changes off site Remarks_ | N/A | | | |
| | | | | |

| A. Roads | Applicable | N/A | |
|----------|---------------|----------------------------|--------------------|
| A. Avaus | Аррисаоте | IVA | |
| 1. Roads | damaged ks | Location shown on site map | Roads adequate N/A |

| | ther Site Conditions |
|-------|--|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks TURNES ON - UNABLE TO DETERMINE IF OPERATING. |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided |
| | Remarks |
| | reducity within the second sec |
| C. T | reducity with an arrangement of the second o |
| C. Ti | reatment System Applicable Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers |
| | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) |
| | Treatment System Applicable Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others |
| | Treatment System Applicable Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional |
| | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date |
| | reatment System Applicable Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified |
| | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually |
| | reatment System Applicable Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified |

| 2. | Electrical Enclosures and Panels (properly rated and functional) |
|----|---|
| 1 | N/A Good condition Needs Maintenance |
| | Remarks |
| | |
| 3. | Tanks, Vaults, Storage Vessels |
| | N/A Good condition Proper secondary containment Needs Maintenance |
| | Remarks |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks No FOCKS ON WELLS - OTHERWISE CONDITION OK. |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. **EXTIS OK.** |

TAB D NORTH PLANTS LNAPL

Five-Year Review Site Inspection Checklist

| Date of inspection: April 27, 2010 EPA ID: C05210020769 Weather/temperature: Clear. Class onitored natural attenuation oundwater containment rtical barrier walls |
|--|
| Weather/temperature: Clean, Clann onitored natural attenuation oundwater containment |
| onitored natural attenuation oundwater containment |
| oundwater containment |
| |
| Site map attached |
| heck all that apply) |
| Title Date |
| Title Date |
| |

| 3. | Local regulatory authorities and response office, police department, office of public he deeds, or other city and county offices, etc.) | ealth or environmental Fill in all that apply. | health, zoning offi | emergency response ce, recorder of |
|--------|---|--|---------------------|---------------------------------------|
| : | Agency <u>Euvironnala</u> Pro fection Contact Ron Berlynn/Greg Hargy Name | in Agency DAM Title | <u>4/21/10</u> | 3/2 -606/ Phone no. |
| | Problems; suggestions; Report attached _ | | | |
| | Agency Contact Name | Title | | Phone no. |
| | Problems; suggestions; Report attached _ | | | |
| | Agency | | | |
| | ContactName Problems; suggestions; Report attached _ | Title | Date | Phone no. |
| | Agency | | | |
| | Name Problems; suggestions; Report attached | | Date | Phone no. |
| 4. | Other interviews (optional) Report attac | hed. | | |
| | | | | |
| | | | | (B) |
| | | | | |
| | V. ACCESS AND INSTITUTIO | NAL CONTROLS | Applicable N | /A |
| A. Fei | ncing | | | |
| 1. | Fencing damaged Location show. Remarks | n on site map G | ates secured | N/A) |
| B. Otl | her Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown on | site map N | <u>Á</u> |

| C. In | stitutional Controls (ICs) | | | | |
|-------|---|----------------------------------|----------------|----------|-------------|
| 1. | Implementation and enforcem Site conditions imply ICs not pr Site conditions imply ICs not be | operly implemented | Yes Yes | No No | N/A N/A |
| | Frequency | porting, drive by) | | | |
| | Responsible party/agency Contact | | | | |
| | Name | Title | Date | - | Phone no. |
| | Reporting is up-to-date Reports are verified by the lead | agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in deed o Violations have been reported Other problems or suggestions: | r decision documents have been m | net Yes Yes | No No | N/A N/A |
| 2. | Adequacy IC Remarks | s are adequate ICs are in | adequate | | N/A |
| D. G | eneral | | | | |
| 1. | Vandalism/trespassing Lo Remarks | 1 | No vandalism e | vident | > |
| 2. | Land use changes on site N/Remarks Culsicle | A vry Majulained A | ved | | |
| 3. | Land use changes off site N/Remarks | À | | | |
| | | | | | |
| | VI. | GENERAL SITE CONDITION | NS | | |
| A. R | oads Applicable N/ | Α | | | |
| 1. | Roads damaged Lo Remarks | cation shown on site map | Roads adequate | - | N/A |
| | | | | | |

| R O | ther Site Conditions |
|-------|--|
| ь. О | Remarks The North Plants LNAPL Project is corrently |
| | Remarks The North Paux LNATE Protes to Control Paux |
| | a pilot project to garrer jutor mation to |
| | a pilot project to gether intermation for revedy |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES (Applicable) N/A |
| A. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical |
| | Good condition All required wells properly operating Needs Maintenance N/A |
| | Remarks |
| | |
| | |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances |
| ۵. | Good condition Needs Maintenance |
| | Remarks N/A |
| | |
| 3. | Spare Parts and Equipment |
| 3. | Readily available Good condition Requires upgrade Needs to be provided |
| | Remarks |
| | TOTAL TO |
| | |
| | |
| ~ | reatment System Applicable (N/A) |
| C. Ti | reatment System Applicable (N/A) |
| 1. | Treatment Train (Check components that apply) |
| | Metals removal Oil/water separation Bioremediation |
| | Air stripping Carbon adsorbers |
| | Filters |
| | Additive (e.g., chelation agent, flocculent) |
| | Others |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date |
| | Equipment properly identified Quantity of groundwater treated annually |
| | Quantity of groundwater treated annually Quantity of surface water treated annually |
| | Remarks |
| | 1 Column AD |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|----|--|
| 3. | Tanks, Vaults, Storage Vessels NA Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances NA Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) (N/A) Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled All required wells located Needs Maintenance N/A Remarks Inspected LNAPL recourty well 25301. The Well is in good condition, buth Pad cover and Productive Casing in place, well is also marked with well ventor and the casing. In spected well 25139 which is a walm level LNAPL nonitoring well on the east side of the project area. This is a 1" puc well. The well has a cap but no professive casing and the well was not marked anywhere with the well northers of so it was deficient to identify the Correct well. The project site was faired to be Chean and from of delarits and vegetation. |

| | XI. OVERALL OBSERVATIONS | | | |
|----|--|--|--|--|
| Α. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The suspection consisted of observation of the containing the condition of wells used for the Pitot Shedy. Some condition of wells used for the Pitot Shedy. Some wells were observed to have no well what fication entire chair containing in ferma from . Each cerell should be now that indication should be such fication and the such fication and the solution of the s | | | |
| В. | Adequacy of O&M | | | |
| В. | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |
| В. | Months Could Can Se Contosion Caper Stould Go Months ing information. Each cerell stould Go May ked with the well identification and the Identification Should be located on the Casing Yasher than an the well Cap on the junes Casing Adequacy of O&M | | | |



Five-Year Review Site Inspection Checklist

| I. SITE INFORMATION | | | | | |
|---|------------------------|--|--|--|--|
| Site name: On-Post Groundwater Monitoring Wells Date of inspection: April 28, 2010 | | | | | |
| Location and Region: RMA Region VIII EPA ID: C05210020769 | | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X Other On-post groundwater monitoring wells, including wells associated with ELF, Basin F, North Plants Complex Trenches, Shell Trenches, Groundwater Mass Removal and Lime Basins project areas, and the Bison Pilot Area | | | | | |
| Attachments: Inspection team roster attached | Site map attached | | | | |
| II. INTERVIEWS | (Check all that apply) | | | | |
| 1. O&M site manager Name Title Date Interviewed at site at office by phone Phone no. Problems, suggestions; Report attached | | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | | | | | |
| | | | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | | |
|--------|--|-----------------------------|------------------------|----------------------------|--|--|
| | Agency TCHD Contact Vincent Stewart Name Problems; suggestions; Report attached | EHS Title | <u>4/27/10</u> Date | 720-322-152.5 Phone no. | | |
| | Agency | - NC-90-30 (8 - 100H9) - HO | | | | |
| | Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. | | |
| | Agency Contact Name | Title | Date | Phone no. | | |
| | Problems; suggestions; Report attached | Title | Date | | | |
| | AgencyContactName | Title | Date | Phone no. | | |
| | Problems; suggestions; Report attached | 11116 | Date | Phone no. | | |
| 4. | Other interviews (optional) Report attach | ed. | | 44-4-4 | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | V. ACCESS AND INSTITUTION | IAL CONTROLS | Applicable N | /A | | |
| A. Fer | ncing | | | | | |
| 1. | Fencing damaged Location shown Remarks | on site map | Gates secured | N/A | | |
| B. Oth | ner Access Restrictions | | | | | |
| 1. | Signs and other security measures Remarks | Location shown | on site map N/ | 'A | | |
| | | | | | | |

| C. In | C. Institutional Controls (ICs) | | | | | | |
|-------|--|-------------------------|------------------|------------|---------------|------------|--------|
| 1. | Implementation and enfor Site conditions imply ICs no Site conditions imply ICs no | ot properly implemented | | Yes Yes | No No | N/A N/A | - |
| | Type of monitoring (e.g., self-reporting, drive by) Frequency Responsible party/agency | | | | | | - - |
| | Contact Name | Title | : | Date | - | Phone no. | - |
| | Reporting is up-to-date Reports are verified by the | lead agency | | Yes Yes | No No | N/A N/A | |
| | Specific requirements in device Violations have been report Other problems or suggestion | ed | nave been met | Yes Yes | No No | N/A N/A | |
| | | | | | | | |
| 2. | Adequacy Remarks | ICs are adequate | ICs are inadequa | | | N/A | |
| D. Ge | eneral | | | | | | |
| 1. | Vandalism/trespassing Remarks | | | dalism e | vident | | |
| 2. | Land use changes on site Remarks | N/A | | | | | |
| 3. | Land use changes off site Remarks | N/A | | | | | - |
| | | | | | | | |

| A. Roads Applicable | | N/A | | |
|---------------------|-----------|----------------------------|----------------|-----|
| 1. Roads | s damaged | Location shown on site map | Roads adequate | N/A |

| В. | B. Other Site Conditions | | | | |
|----|---|--|--|--|--|
| | Remarks | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A | | | | |
| A. | Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A | | | | |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks | | | | |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks 2530 - Good Condition | | | | |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks | | | | |
| | | | | | |
| C. | Treatment System Applicable N/A | | | | |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually Parables | | | | |
| | Remarks | | | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) | | | | |
|----|---|--|--|--|--|
| | N/A Good condition Needs Maintenance | | | | |
| | Remarks | | | | |
| 3. | Tanks, Vaults, Storage Vessels | | | | |
| | N/A Good condition Proper secondary containment Needs Maintenance Remarks | | | | |
| 4. | Discharge Structure and Appurtenances | | | | |
| | N/A Good condition Needs Maintenance | | | | |
| | Remarks | | | | |
| 5. | Treatment Building(s) | | | | |
| | N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored | | | | |
| | Remarks | | | | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled All required wells located Remarks Needs Maintenance N/A | | | | |
| | | | | | |

| | XI. OVERALL OBSERVATIONS | | | |
|----|--|--|--|--|
| A. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | |
| | | | | |
| В. | Adequacy of O&M | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |

TAB E BASIN F

Five-Year Review Site Inspection Checklist

| I. SITE INFORMATION | | | | | | |
|---|--|--|--|--|--|--|
| Site name: Basin F Moultoning | Site name: Basin F Moultoning Date of inspection: April 28, 2010 | | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | | |
| Agency, office, or company leading the five-year review: RVO Weather/temperature: | | | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment Other Groundwater Monitored natural attenuation Groundwater containment Vertical barrier walls | | | | | | |
| Attachments: Inspection team roster attached | Site map attached | | | | | |
| II. INTERVIEWS (| Check all that apply) | | | | | |
| 1. O&M site manager Rich Rows a | | | | | | |
| Name Interviewed at site at office by phone Phone r Problems, suggestions; Report attached | Title Date | | | | | |
| 9 | | | | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | | |
|-------------|--|------------------------|---------------|-----------------------|--|--|
| | Agency Europeulal Protection Contact Ron Bertran | Agency RAM | 7/28/10 | 3/2-606/ Phone no. | | |
| | Name Problems; suggestions; Report attached | Title | | Phone no. | | |
| | Agency ContactName | | | 751 | | |
| | Name Problems; suggestions; Report attached | | Date | Phone no. | | |
| | Agency | | | | | |
| | ContactName Problems; suggestions; Report attached | | Date | Phone no. | | |
| | Agency Contact Name | | | | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. | | |
| 4. | Other interviews (optional) Report attach | hed. | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | V. ACCESS AND INSTITUTION | NAL CONTROLS Ap | pplicable N/A | A | | |
| A. Fe | encing | | | | | |
| 1. | Fencing damaged Location shown Remarks Feneing oround | n on site map Gates | s secured | N/A | | |
| B. O | ther Access Restrictions | | | | | |
| 1. | Signs and other security measures Remarks <u>Carmy Signs</u> | Location shown on site | - | | | |

| C. Ins | titutional Controls (ICs) | | | | |
|--------|---|--------------------------------|-------------|----------|------------|
| 1. | Implementation and enf Site conditions imply ICs Site conditions imply ICs | not properly implemented | Yes Yes | No No | N/A N/A |
| | Frequency | self-reporting, drive by) | | | |
| | ContactName | Title | Date | | Phone no. |
| | Reporting is up-to-date Reports are verified by the | e lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in over Violations have been report Other problems or suggest | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy Remarks | ICs are adequate ICs are inade | • | | N/A |
| D. Ger | | | | | |
| 1. | Vandalism/trespassing Remarks | Location shown on site map No | vandalism e | vident | |
| 2. | Land use changes on site Remarks | Maintand Avea | | | |
| 3. | Land use changes off site Remarks | : N/A | | | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| A. Roa | nds Applicable | N/A | | | |
| 1. | Roads damaged Remarks | Location shown on site map Roa | ds adequate | | N/A |

| B. O | ther Site Conditions |
|------|--|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| C. T | reatment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| | Additive (e.g., chelation agent, flocculent) Others |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date |
| | Equipment properly identified |
| | Quantity of groundwater treated annually |
| | Quantity of surface water treated annually |
| | Remarks |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|----|--|
| 3. | Tanks, Vaults, Storage Vessels Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance Remarks Tu special dozen quachent Mondon y well 5 26157 and 26015. Well 26157 had been latended |
| | and has an ill Filling Cover. well has ID on outside come well 26015 is in good condition with cop/cover one Casing induct and well tay in place |

| XI. OVERALL OBSERVATIONS | | | | | |
|--------------------------|--|--|--|--|--|
| A. | Implementation of the Remedy | | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). In Spection Consisted of observing the Condition of Love gradient manifolding wells. The well condition was acceptable. | | | | |
| В. | Adequacy of O&M | | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | | |

OSWER No. 9355.7-03B-P

Five-Year Review Site Inspection Checklist

| I. SITE INFO | ORMATION Basin F | | | | | |
|--|------------------|--|--|--|--|--|
| Site name: On-Post Groundwater Monitoring Wells Date of inspection: April 28, 2010 | | | | | | |
| Location and Region: RMA Region VIII EPA ID: C05210020769 | | | | | | |
| Agency, office, or company leading the five-year review: RVO Weather/temperature: 75°F, 30 mph steady elecqPc/ousy | | | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X Other On-post groundwater monitoring wells, including wells associated with ELF, Basin F, North Plants, Complex Trenches, Shell Trenches, Groundwater Mass Removal and Lime Basins project areas, and the Bison Pilot Area | | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | | |
| II. INTERVIEWS (Check all that apply) | | | | | | |
| 1. O&M site manager Name Title Date Interviewed at site at office by phone Phone no Problems, suggestions; Report attached | | | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | | | | | | |

| | Agency 7CHS | ENOV STORY | 4/28/10 | 720-372-15 |
|---|---|--------------------|--------------|------------|
| | Agency 7045 Contact Touk Marcus Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency | | | |
| | ContactName Problems; suggestions; Report attached | | | |
| | Agency | | | |
| | Contact Name Problems; suggestions; Report attached | | | |
| | Agency Contact Name | | | |
| | Name Problems; suggestions; Report attached | | Date | |
| _ | Other interviews (optional) Report attach | ned. | | |
| _ | | | | |
| | | | pplicable N/ | <u>'A</u> |
| | V. ACCESS AND INSTITUTION | NAL CONTROLS A | 11 | |
| | V. ACCESS AND INSTITUTION Incing Fencing damaged Location shown Remarks WENS WINN BUA BA | n on site map Gate | es secured | N/A |

| C. Inst | itutional Controls (ICs) | | | | | |
|---------|---|----------------------------|---------------|----------|------------|------------|
| 1. | Site conditions imply ICs not being fully enforced Yes No Type of monitoring (e.g., self-reporting, drive by) | | | | N/A N/A | |
| | Responsible party/agency | | | | | -11 |
| | ContactName | Title | | Date | • | Phone no. |
| | Reporting is up-to-date Reports are verified by the | ead agency | | es es | No No | N/A N/A |
| | Specific requirements in accept of acception acceptions was a second mass | | | | No No | N/A N/A |
| 2. | Adequacy | ICs are adequate ICs ar | re inadequate | | | (N/A) |
| | Remarks | | | | | |
| D. Ger | ieral | | • | | | |
| 1. | | Location shown on site map | No vanda | lism e | vident | |
| 2. | Land use changes on site Remarks | N/A | | | | |
| 3. | Land use changes off site Remarks | N/A | | | | |
| | | | | | | |

| VI. GENERAL SITE CONDITIONS | | | | | |
|-----------------------------|------------|----------------------------|----------------|-----|--|
| A. Roads | Applicable | N/A | | | |
| 1. Roads | damaged | Location shown on site map | Roads adequate | N/A | |

| В. О | ther Site Conditions |
|------|--|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks Pumps Not Tutakes on UNABLE to Determine it operating. |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| C. T | reatment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| | Additive (e.g., chelation agent, flocculent) Others |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date Equipment properly identified |
| | Quantity of groundwater treated annually |
| | Quantity of surface water treated annually |
| | Remarks |
| | |

| s Maintenance | | | | | |
|--|--|--|--|--|--|
| | | | | | |
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| | | | | | |
| | | | | | |
| | | | | | |
| N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored | | | | | |
| | | | | | |
| | | | | | |
| condition | | | | | |
| N/A | | | | | |
| | | | | | |
| | | | | | |
| 1 | | | | | |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). Well 26 157 needs per well plotectors— Temesy when CASING Extended |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

TAB F ON-POST WELLS - GENERAL

| ORMATION |
|---|
| Date of inspection: April 28, 2010 |
| EPA ID: C05210020769 |
| Weather/temperature: . Clear, wudy |
| Monitored natural attenuation Groundwater containment Vertical barrier walls etc. Monitorive cuell 5 and enclosure Site map attached (Check all that apply) Title Date |
| Title Date |
| no |
| |

| | office, police department, office of public heal deeds, or other city and county offices, etc.) F | ill in all that apply. | caim, zomig om | 00, 10001401 01 |
|----|---|------------------------|--|-----------------------|
| | Agency Euriron mulal Prefeet Contact Name | ion Agency | 4/28/10 | 312-6061 Phone no. |
| | Name Problems; suggestions; Report attached | Title | | Phone no. |
| | Agency | | | |
| | ContactName Problems; suggestions; Report attached | | | Phone no. |
| | Agency | | | |
| | Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency Contact Name | | | |
| | Name Problems; suggestions; Report attached | | Date | Phone no. |
| l. | Other interviews (optional) Report attached | d. | | |
| | | | <u>. </u> | |
| | | | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTIONA | AL CONTROLS | Applicable N/ | A |
| | V. ACCESS AND INSTITUTION A cencing Fencing damaged Location shown of Remarks | | Applicable N/ | A N/A |
| • | encing Fencing damaged Location shown o | n site map Gat | res secured | |

| C. Inst | titutional Controls (ICs) | | | | |
|---------|--|--------------------------------|-------------|----------|------------|
| 1. | Implementation and enf | not properly implemented | Yes Yes | No No | N/A N/A |
| | Type of monitoring (e.g., Frequency | self-reporting, drive by) | | | |
| | | · | | | |
| | Contact Name | Title | Date | e - | Phone no. |
| | Reporting is up-to-date Reports are verified by th | e lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in overlations have been repo Other problems or suggest | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy Remarks | ICs are adequate ICs are inade | equate | | N/A |
| D. Ger | neral | | | | |
| 1. | Vandalism/trespassing Remarks | Location shown on site map | vandalism e | evident | > |
| 2. | Land use changes on site | N/A | | | |
| 3. | Land use changes off sit Remarks | e N/A | | | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| A. Ros | ads Applicable | N/A | | | |
| 1. Koz | Roads damaged Remarks | | ds adequate | | N/A |

| B. Other Site Conditions | | | | | |
|---|---------------|--|--|--|--|
| Remarks | | | | | |
| | | | | | |
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| | | | | | |
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| | | | | | |
| · | | | | | |
| IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable | > N/A | | | | |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable (| N/A | | | | |
| 1. Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance Remarks | N/A) | | | | |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks | | | | | |
| 3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to Remarks | o be provided | | | | |
| | | | | | |
| C. Treatment System Applicable N/A | | | | | |
| 1. Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters | | | | | |
| Additive (e.g., chelation agent, flocculent)Others | | | | | |
| Good condition Needs Maintenance | | | | | |
| Sampling ports properly marked and functional | | | | | |
| Sampling/maintenance log displayed and up to date Equipment properly identified | | | | | |
| Equipment properly identified Quantity of groundwater treated annually | | | | | |
| Quantity of groundwater treated annually | | | | | |
| Remarks | | | | | |
| | | | | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|---|---------------------------------|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) (N/A) Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks In Speaked wells 24105, 27091, 07522 and 04029 Which Showed damage clining Previous five year Remew | |
| • | well 24105 15 conflictly danaged and has not changed 5 vice 2005 Fine gear you row. Well 27091 5 housed a danaged pad in 2005 Fine year review. Well 27091 5 housed a well 502522 had a no protective casing and the well Casing was broken off at ground 5 vi Four and had no come added to the well and a Cap 15 in place, he has added to the well and a Cap 15 in place, he off at ground 5 vi Fore and has no protective cas for at a stretch prese of Puc has been added to the well. The well was saved of F clear and a cap Put on. The well 15 not marked except For a marked on the well 15 not marked except For a marked in special well 34014 and 34015 decreased in special well 34014 and 34015 decreased potentially coused by to the Book Is danage potentially coused by to the ground in the protective covers were an the ground in land well 5 vig esting that the bison had the lack well 5 vig esting that the bison had the | Puc esponent pren ulen |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The inspection Consisted of observation of wells that showed damage during the last five year periew (2005). Verell 24105 penains do hazed but the colon three wells shoved that affording out the colon three wells shoved that affording out of order and order have had Puc Casing addition was somewhat has done and but the casing addition was somewhat loose. Afferges showed by human to strengther the casing stickup for these wells |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| Meneral Monitoring Well Juspection | | | | | |
|---|------------------------------------|--|--|--|--|
| I. SITE INFORMATION | | | | | |
| Site name: On-Post Groundwater Monitoring Wells | Date of inspection: April 28, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X OtherOn-post groundwater monitoring wells, including wells associated with ELF, Basin F, North Plants, Complex Trenches, Shell Trenches, Groundwater Mass Removal and Lime Basins project areas, and the Bison Pilot Area | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS (Check all that apply) | | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | | | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | | |
|----|--|-------------------|-------------------|---------------------------|--|--|
| | Agency CDPHE Contact Ken Vogler Name Problems; suggestions; Report attached Some were Admaged so | Engineer | Y/28/10 Pate | 303 (92-3383 Phone no. | | |
| | Agency | | report P. | D'S | | |
| | ContactName Problems; suggestions; Report attached | Title | Date | Phone no. | | |
| | Agency Contact Name | Title | Date | Phone no. | | |
| | Problems; suggestions; Report attached | | 10 mm 300 stage 5 | | | |
| | ContactName Problems; suggestions; Report attached | Title | Date | Phone no. | | |
| 4. | Other interviews (optional) Report attach | ned. | | | | |
| | | | | | | |
| | | | | | | |
| | V. ACCESS AND INSTITUTION | NAL CONTROLS | Applicable 1 | V/A | | |
| A. | Fencing | | | | | |
| 1. | Fencing damaged Location shown Remarks | on site map | Gates secured | N/A | | |
| B. | Other Access Restrictions | | | | | |
| 1. | Signs and other security measures Remarks | Location shown of | on site map N | N/A | | |

| C. Inst | itutional Controls (ICs) | | | | | |
|---------|---|---------------------|---------------|-------------|----------|------------|
| 1. | Implementation and enfor Site conditions imply ICs no Site conditions imply ICs no | ot properly impleme | | Yes Yes | No No | N/A N/A |
| | Type of monitoring (e.g., se Frequency | - | | | | |
| | Contact | | | | | |
| | Name | | Title | Date | ; | Phone no. |
| | Reporting is up-to-date Reports are verified by the l | ead agency | | Yes Yes | No No | N/A N/A |
| | Specific requirements in dec Violations have been report Other problems or suggestion | eđ | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy Remarks | ICs are adequate | ICs are inade | equate | | N/A |
| D. Ger | ıeral | | | | | |
| 1. | Vandalism/trespassing Remarks | Location shown or | r | vandalism e | vident | |
| 2. | Land use changes on site Remarks | | | | | |
| 3. | Land use changes off site Remarks | | | | | |
| | | | | | | |

| VI. GENERAL SITE CONDITIONS | | | | | |
|-----------------------------|---------------|----------------------------|----------------|-----|--|
| A. Roads | Applicable | N/A | | | |
| 1. Roads | damaged ks | Location shown on site map | Roads adequate | N/A | |

| B. Other Site Conditions | | | | | |
|--------------------------|---|----------------------|--|--|--|
| | Remarks | | | | |
| | | | | | |
| | | | | | |
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| | | | | | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES App | plicable N/A | | | |
| A. Gro | oundwater Extraction Wells, Pumps, and Pipelines Applicab | ole N/A | | | |
| 1. | Pumps, Wellhead Plumbing, and Electrical | | | | |
| | Good condition All required wells properly operating Needs Mainte | nance N/A | | | |
| | Remarks | | | | |
| | | | | | |
| | | | | | |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurted Good condition Needs Maintenance | enances | | | |
| | D | | | | |
| | Remarks | | | | |
| 3. | Spare Parts and Equipment | | | | |
| | Readily available Good condition Requires upgrade | Needs to be provided | | | |
| | Remarks | | | | |
| | | | | | |
| | | | | | |
| C Two | reatment System Applicable N/A | | | | |
| C. Tre | | | | | |
| 1. | Treatment Train (Check components that apply) | | | | |
| | Metals removal Oil/water separation Bioremediation | | | | |
| | Air stripping Carbon adsorbers | | | | |
| | Filters Additive (e.g., chelation agent, flocculent) | | | | |
| | Others | | | | |
| | Good condition Needs Maintenance | | | | |
| | Sampling ports properly marked and functional | | | | |
| | Sampling/maintenance log displayed and up to date | | | | |
| ļ | Equipment properly identified | | | | |
| | Quantity of groundwater treated annually | | | | |
| | Quantity of surface water treated annually | - | | | |
| | Remarks | | | | |
| | | | | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|---|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks Well 24195 destroyed at Surface | |

Well 27091 inspected & is OK

Well 34014 inspected & is OK in BPA

Well 34015 inspected padis broken
otherwise well is OH in BPA

Bison knock protective corpect

Suggest close w/bolt

Examined five sanitary sewer caps
in BPA - all OH

Well 04027 broken off at top

Well 04029 broken off at top

Well 02522 inspected & OK

| | XI. OVERALL OBSERVATIONS | | |
|----|--|--|--|
| Α. | Implementation of the Remedy | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | |
| | | | |
| | | | |
| В. | Adequacy of O&M | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | |

'ser County Heatth

OSWER No. 9355.7-03B-P

Five-Year Review Site Inspection Checklist

| I. SITE INFO | ORMATION |
|---|---|
| Site name: On-Post Groundwater Monitoring Wells | Date of inspection: April 28, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: 75°F, 30mph 3 teady |
| X Access controls G Institutional controls V Groundwater pump and treatment Surface water collection and treatment X Other On-post groundwater monitoring w | Monitored natural attenuation froundwater containment Vertical barrier walls vells, including wells associated with ELF, Basin F, es, Groundwater Mass Removal and Lime Basins project |
| Attachments: Inspection team roster attached | |
| II. INTERVIEWS | (Check all that apply) |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date |

| Contact 1 mm & | MARTELLA | ENV. Specialist | 4/28/10 | 726-322-15 |
|----------------------------|---------------------------|------------------|--------------|------------|
| Na. Problems; suggestions. | me ; Report attached _ | Title | / Date | Phone no. |
| Agency | | | | |
| | | Title | | |
| Agency | | | | |
| | | Title | | |
| Agency | | | | |
| | | Title | Date | |
| Other interviews (opt | ional) Report attac | hed. | | |
| | | | | |
| | | | | |
| V. ACCESS | AND INSTITUTIO | NAL CONTROLS | Applicable N | D |
| encing | Location show | n on site map Ga | tes secured | N/A |
| Fencing damaged Remarks | | | | |

| C. | Institutional Controls (ICs) | | - | | |
|----|--|--|-------------------------------------|----------|------------------|
| 1. | Implementation and enfo Site conditions imply ICs Site conditions imply ICs | not properly implemented | Yes Yes | No No | N/A N/A |
| | Frequency | self-reporting, drive by) | | | |
| | Contact Name | Title | Date | | Phone no. |
| | Reporting is up-to-date Reports are verified by the | e lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in d Violations have been repo Other problems or suggest | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy Remarks Res Vaccted | Cs are adequate ICs are inade | quate | | N/A |
| D. | General | | | | |
| 1. | Vandalism/trespassing Remarks Well 3400 | Location shown on site map No 15 has a Booken Will Pab, will smy Loose at Sverke (A) Not m | vandalism e US 04627 SECUBALY | vident | OZG CASVAG BROKE |
| 2. | Land use changes on site Remarks | | | | |
| 3. | Land use changes off site Remarks | e NA | | , , - | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| Α. | Roads Applicable | N/A | | | |
| 1. | Roads damaged Remarks | Location shown on site map Roa | ds adequate | | N/A |

| B. Oth | er Site Conditions | |
|--------|---|--|
| | Remarks | |
| | | |
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| | | |
| | | |
| | | |
| | · | |
| | | |
| | IX. GROUNDWATER | /SURFACE WATER REMEDIES Applicable N/A |
| A. Gro | oundwater Extraction Wells, | Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbin Good condition All requ Remarks Pumps Not | g, and Electrical ired wells properly operating Needs Maintenance N/A TURNED ON - UNABLE TO DETERMING IF PERATING |
| 2. | Good condition Needs M | es, Valves, Valve Boxes, and Other Appurtenances Izaintenance |
| 3. | Spare Parts and Equipment Readily available Remarks UNKILO AND | Good condition Requires upgrade Needs to be provided |
| | | |
| C. Tre | eatment System | Applicable N/A |
| 1. | Treatment Train (Check co Metals removal Air stripping Filters | omponents that apply) Oil/water separation Bioremediation Carbon adsorbers |
| | Additive (e.g., chelation a Others | gent, flocculent) |
| | Good condition | Needs Maintenance |
| | Sampling ports properly n Sampling/maintenance log | rarked and inferioral |
| | Equipment properly identi | |
| | Quantity of groundwater t | reated annually |
| | Quantity of surface water | treated annually |
| | Remarks | |
| l | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) |
|----|--|
| | (N/A) Good condition Needs Maintenance |
| | Remarks |
| | |
| 3. | Tanks, Vaults, Storage Vessels |
| | N/A Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances (N/A) Good condition Needs Maintenance Remarks |
| | Remarks |
| 5. | Treatment Building(s) |
| | N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored |
| | Remarks |
| | |
| 6. | Monitoring Wells (pump and treatment remedy) |
| | Properly secured/locked Functioning Routinely sampled Good condition |
| | All required wells located Needs Maintenance N/A 3401435400 |
| | Remarks All wells unlocked well GAPS OFF INSIDE BISON ARCA (26157426000) |
| | WINTHOS BROKEN (34015), CASING (PUX) LOOSE ATSURFACE (02522). |

| | XI. OVERALL OBSERVATIONS | |
|----|---|--------|
| A. | Implementation of the Remedy | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). NULLIOS (Noeth Bounday) DAMAGED NCEDS DEPLACEMENT, WALLS OFORT & OFOR | LTION. |
| В. | Adequacy of O&M | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. South Wens (Ranghan specifical) Appendix To BE IN Daniero Condition For the particular Portion. | |

TAB G OFF-POST ARMY WELLS

| I. SITE INFO | ORMATION |
|---|--|
| Site name: Off-Post Private Wells | Date of inspection: April 29, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| Access controls Institutional controls Groundwater pump and treatment Surface water collection and treatment | Monitored natural attenuation froundwater containment Vertical barrier walls sampled by TCHD in plume areas, may include |
| Attachments: Inspection team roster attached | Site map attached |
| II. INTERVIEWS | (Check all that apply) |
| 1. O&M site manager Rich Board Stern Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | no |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date |

| 3. | Local regulatory authorities and response office, police department, office of public headeds, or other city and county offices, etc.) | alth or environmental hea Fill in all that apply. | alth, zoning offic | mergency response e, recorder of |
|-----------|--|--|--------------------|-------------------------------------|
| | Agency <u>Sur woundal</u> Protect Contact <u>Rev Bertran</u> Name Problems; suggestions; Report attached | | 7/24/10 Date | 312 606/ Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| 4. | Other interviews (optional) Report attach | ed. | | |
| | | | | |
| | V. ACCESS AND INSTITUTION | NAL CONTROLS A | applicable N/ | /A |
| | | IAL CONTROLS P | applicable 14/ | |
| A. Fer 1. | Fencing damaged Location shown Remarks | on site map Gate | es secured | N/A |
| B. Oth | ner Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown on sit | e map N | À |

| | | | | | |
|--------|---|---------------------------------|------------|----------|------------|
| C. Ins | titutional Controls (ICs) | | | | |
| 1. | Implementation and enfo Site conditions imply ICs n Site conditions imply ICs n | ot properly implemented | Yes Yes | No No | N/A N/A |
| | Frequency | elf-reporting, drive by) | | | |
| | Responsible party/agency Contact Name | | | | |
| | Name | Title | Date | e | Phone no. |
| | Reporting is up-to-date Reports are verified by the | lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in de Violations have been repor Other problems or suggesti | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy | ICs are adequate ICs are inadeq | uate | | N/A |
| D. Ger | | | | | |
| 1. | | | andalism e | evident | |
| 2. | Land use changes on site Remarks | | | | |
| 3. | Land use changes off site Remarks | N/A | | | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| A. Roa | ds Applicable | N/A | | | |
| 1. | Roads damaged | Location shown on site map Road | s adequate | | N/A |

Remarks_

| | | Remarks |
|-----------|-------------|--|
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| | | |
| | <u> </u> | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. | Gre | oundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | ¥6 | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. | | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | | Spare Parts and Equipment G Readily available Good condition G Requires upgrade Needs to be provided Remarks |
| | | |
| C. | Tres | atment System Applicable N/A |
| 1. | | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| | | Additive (e.g., chelation agent, flocculent) Others |
| | | Good condition Needs Maintenance |
| | | Sampling ports properly marked and functional |
| | | Sampling/maintenance log displayed and up to date |
| | | Equipment properly identified |
| | | Quantity of groundwater treated annually |
| | | C C C C C C C C C C C C C C C C C C C |
| | | Quantity of surface water treated annually Remarks |

| 2. | Electrical Enclosures and Panels (properly rated and functional) NA Good condition Needs Maintenance Remarks | |
|-----|---|------------------------------|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances NA Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks Duspected off post Army wells 37349, 37347, 37327 and 37374, well 37349 had a classed protection | e |
| the | Casing and a coun short could not be locked in the 20 five year review. The casing and cover have been fixed and one how locked. Well 37327 had been stroked to want here no protective cessing and the Poch stroken aff, in the 2005 five year review inspective added. I'm well is locked. Well 37374 had broken casing and cound added. I'm well is locked. Well 37374 had broken casing in 2005 five year review. The well broken casing in 2005 five year review. The well how hos a flush mount coun which is bolted in the way and construction are constructions. | we er casiv |
| , | broken casing in 2005 fire year person the well wow has a Flushmount coun which is bolted in well 37347 was buried during road constructed was found and fixed with a manhale in wew Street for access. | in place ection in the |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The inspection consisted of observations of selected of the inspection of selected of the desired of the desir |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

TAB H RAILYARD MOTOR POOL EXTRACTION

| I. SITE INFORMATION | | | | |
|---|--|--|--|--|
| Site name: Railyard Extraction Facility Date of inspection: April 27, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | |
| X Access controls | Monitored natural attenuation Groundwater containment Vertical barrier walls | | | |
| Attachments: Inspection team roster attached Site map attached II. INTERVIEWS (Check all that apply) | | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | no | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone problems, suggestions; Report attached | | | | |

| 3. | office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|----------|---|---------------------------------|-------------------------|------------------------|--|
| | Agency Burron until Profection Contact Ron Best vom Grey Houge Name | n Agener Nauva RPM5 Title | <u> 4/27/10</u> Date | 312 -6061 Phone no. | |
| | Problems; suggestions; Report attached | | | | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. | |
| | Agency Contact Name Problems; suggestions; Report attached | | Date | Phone no. | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. | |
| 4. | Other interviews (optional) Report attache | ed. | | | |
| | | | | | |
| | | | | | |
| | V. ACCESS AND INSTITUTION | AL CONTROLS A | Appl ic able N/A | | |
| A. Fenci | ing | | | | |
| | Fencing damaged Location shown Remarks | on site map Gate | es secured | (N/A) | |
| B. Other | r Access Restrictions | | | | |
| | Signs and other security measures Remarks | Location shown on sit | e map N/A |) | |

| C. Ins | titutional Controls (ICs) | | | | |
|--------|--|----------------------------------|------------|---------------|------------|
| 1. | Implementation and enf Site conditions imply ICs Site conditions imply ICs | not properly implemented | Yes Yes | No No | N/A N/A |
| | Frequency | self-reporting, drive by) | | | |
| i | Contact | | | | |
| | Name | Title | Date | - | Phone no. |
| | Reporting is up-to-date Reports are verified by the | e lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in d Violations have been repo Other problems or suggest | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy | ICs are adequate ICs are inadequ | ıate | | N/A |
| D. Gen | Remarks | | | | |
| 1. | Vandalism/trespassing Remarks | Location shown on site map No va | ndalism e | vident | |
| 2. | Land use changes on site Remarks Treature | N/A system is still on h | ع(د | | |
| 3. | Land use changes off site Remarks | (N/A) | | | |
| | | AT CONTROL STEE CONDITIONS | | | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| A. Roa | ds Applicable | N/A | | | |
| 1. | Roads damaged Remarks | Location shown on site map Roads | adequate | > | N/A |

| B. O | ther Site Conditions |
|-------|---|
| | Remarks |
| | |
| | |
| | |
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| | |
| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. G | oundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition (All required wells properly operating) Needs Maintenance N/A Remarks |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance |
| | Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks Spare Carbon tanks available on Site |
| | |
| C. Tr | eatment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| | Additive (e.g., chelation agent, flocculent) |
| | Others Needs Maintenance |
| | Good condition Needs Maintenance Sampling ports properly marked and functional - Ports were not manked. Sampling/maintenance log displayed and up to date - OEM Manyal not available Equipment properly identified. |
| | Sampling/maintenance log displayed and up to date - OEM Manyal not available |
| | Equipment properly identified · In the at must be alding |
| | Quantity of groundwater treated annually |
| | Quantity of surface water treated annually |
| | Remarks Treatment Plant clean and operating. Do Stills or |
| | leaks plantified. No eviden of anival intrusion. |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks Panels Looked. |
|----|---|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks Land Tu spechod Monitoring wells 03527, 03001. well 03001 has a gauged and warm times casing tog which may Officet accuracy of water level Measurement - well |
| | had no protective casing or cover, inver casing had was |
| | well 03527 in good condition |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| Α. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). Provided The street Constitute of Observation of the Ryts threatment plant and selected system would foring cerells. The treatment plant was selected system would form cerells. The treatment plant was in speed can be of manual was found. The sampling parts were not marked and an Ofm manual street should be present well object, a monitoring well had a grown an eneuen casing surface which could offect weeky level wear surface which the casing surface which |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| I. SITE INFO | ORMATION | | | | |
|--|--|--|--|--|--|
| Site name: Railyard Extraction Facility | Date of inspection: April 27, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| X Access controls | Monitored natural attenuation Froundwater containment Pertical barrier walls | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS | (Check all that apply) | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |

| Agency CBPHE Contact Hen Vogler Engineer Hizlio 3 692 Name Title Date Pho Problems; suggestions; Report attached All OK except See p. 55 | ne no. |
|---|--------|
| | |
| Problems; suggestions; Report attached All OH except See p, 5-5 | |
| Agency Contact | |
| Contact Name Title Date Photoproblems; suggestions; Report attached | ne no. |
| Agency Contact | |
| Contact Name Title Date Photen Problems; suggestions; Report attached | ne no. |
| Agency Contact | |
| Contact Name Title Date Phote Problems; suggestions; Report attached | ne no. |
| 4. Other interviews (optional) Report attached. | |
| | |
| | |
| | |
| V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A | |
| A. Fencing | |
| 1. Fencing damaged Location shown on site map Gates secured No Remarks | /A |
| B. Other Access Restrictions | |
| 1. Signs and other security measures Location shown on site map N/A Remarks_ | |

| 1. | Implementation and enfor | | | | | 27/4 |
|------------|--|--|---------------------|--------------------|----------|----------|
| | Site conditions imply ICs n | ot properly implemente | ed | Yes | No | N/A |
| | Site conditions imply ICs not being fully enforced | | | Yes | No | N/A |
| | Type of monitoring (e.g., so Frequency | | | | | |
| | Responsible party/agency | | | | | |
| | Contact | | 2001200 | | 31 31 CO | |
| | Name | T | ìtle | Date | e - | Phone no |
| | Reporting is up-to-date | | | Yes | No | N/A |
| | Reports are verified by the | lead agency | | Yes | No | N/A |
| | Specific requirements in de | ed or decision docume | nts have heen met | Yes | No | N/A |
| | Violations have been report | | its nave occii inci | Yes | No | N/A |
| | | | | 1 45 | 2.0 | |
| | Other problems or suggestic | ons: Report attacl | | | | |
| 2. | Adequacy | - | ICs are inadeq | uate | | N/A |
| 2. D. G | Adequacy | ICs are adequate | ICs are inadeq | uate | | N/A |
| | Adequacy Remarks | ICs are adequate Location shown on si | ICs are inadeq | uate | | N/A |
| D. G | Adequacy Remarks eneral Vandalism/trespassing | ICs are adequate Location shown on si | ICs are inadeq | uate andalism e | evident | N/A |

| VI. GENERAL SITE CONDITIONS | | | |
|-----------------------------|----------------------------|---|--|
| Applicable | N/A | | |
| oads damaged emarks | Location shown on site map | Roads adequate | N/A |
| | oads damaged | Applicable N/A oads damaged Location shown on site map | Applicable N/A oads damaged Location shown on site map Roads adequate |

| D. O | ther Site Conditions |
|------|--|
| | Remarks |
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| | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| A. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| C. T | reatment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| | Additive (e.g., chelation agent, flocculent) Others |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date |
| | Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified |
| | Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|----|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks Minor Sullage Meter of the tonk in |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks |

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| XI. OVERALL OBSERVATIONS | | |
|--------------------------|--|--|
| Α. | Implementation of the Remedy | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | |
| | | |
| | | |
| В. | Adequacy of O&M | |
| to to | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | |
| | | |

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TAB I CERCLA WTF SPTF

| I. SITE INF | ORMATION |
|---|---|
| Site name: CERCLA WTF / Lime Basins Extraction | Date of inspection: April 27, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| X Access controls X Institutional controls X X Groundwater pump and treatment Surface water collection and treatment | Monitored natural attenuation Groundwater containment Vertical barrier walls t Processes <u>Fusperted</u> Line Bassius iny 57 steins and CERCA Treatment is an Site map attached and Melaning building |
| | · · · · · · · · · · · · · · · · · · · |
| II. INTERVIEWS | *************************************** |
| 1. O&M site manager Rick Boyds ee Name Interviewed (at site) at office by phone Phone Problems, suggestions; Report attached | Title Date |
| 2. O&M staff | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date |
| | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|--------|--|--------------------------|-------------|---------------------------------------|--|
| | Agency Environment Prefection Contact Rom Ber Ivan Rich Board | Agency Slee RPMS | | 312-6061 | |
| | Name Problems; suggestions; Report attached | Title | | | |
| | AgencyContact | | | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. | |
| | Agency | | | | |
| | ContactName Problems; suggestions; Report attached | Title | Date | Phone no. | |
| | Agency ContactName | 2 | | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. | |
| 4. | Other interviews (optional) Report attach | ed. | | | |
| | | | | | |
| | | | | | |
| | V. ACCESS AND INSTITUTION | IAL CONTROLS App | licable N/A | A | |
| A. Fen | cing | | | | |
| 1. | Fencing damaged Location shown Remarks Fencing around CF 325145 15 W thin perum | | | N/A ondition | |
| | er Access Restrictions | | | · · · · · · · · · · · · · · · · · · · | |
| 1. | Signs and other security measures Remarks Signs and obility or Gumb and duratum sys | Location shown on site m | à mon L | | |

| C | Institutional Controls (ICs) | | | | |
|----|--|----------------|----------------|------------|----------|
| 1. | Implementation and enforcement Site conditions imply ICs not properly implemented | Yes | No | N/A | |
| | Site conditions imply ICs not being fully enforced | Yes | No | N/A | |
| | Type of monitoring (e.g., self-reporting, drive by) Frequency | | | | - |
| | Responsible party/agencyContact | | | | - |
| | Name Title | Date | - - | Phone no. | _ |
| | Reporting is up-to-date Reports are verified by the lead agency | Yes Yes | No No | N/A N/A | |
| | Specific requirements in deed or decision documents have been met Violations have been reported Other problems or suggestions: Report attached | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy ICs are adequate ICs are inadeq | uate | | N/A | |
| | Remarks | | | | |
| | General Vandalian (turna and a said and a sa | ndalism e | ridont1 | | |
| 1. | Vandalism/trespassing Location shown on site map No va Remarks | indansin e | videnio | | |
| 2. | Remarks Line Bosins 15 with Army rel CERCLA Plant in UPL but Schooluse | ained For a | ave levo | lition in | 20(6 |
| 3. | Land use changes off site N/A Remarks | | | | |
| | | | | | |
| | VI. GENERAL SITE CONDITIONS | | | | |
| Α. | Roads Applicable N/A | | | | |
| 1. | Roads damaged Location shown on site map Roads Remarks | adequate | | N/A | |

| B. Other Site Conditions |
|--|
| Remarks |
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| IX. GROUNDWATER/SURFACE WATER REMEDIES (Applicable N/A |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. Pumps, Wellhead Plumbing, and Electrical |
| Good condition All required wells properly operating Needs Maintenance N/A |
| Remarks Pm) 1 Convently excounted with Extraction well out |
| Non-initial Not Diana Long Well. At Live of Inspection |
| Purp reat laying on ground near hell in unexceed condition and |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances |
| Good condition Needs Maintenance |
| Remarks |
| |
| 3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| |
| C. Treatment System Applicable N/A |
| 1. Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation |
| Air stripping Carbon adsorbers |
| Filters |
| Additive (e.g., chelation agent, flocculent) |
| Others |
| Good condition Needs Maintenance |
| Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date - No OFM Marcal in tracked plant |
| Equipment properly identified |
| Quantity of groundwater treated annually |
| Quantity of groundwater treated annually |
| Remarks |
| |

| 2. | . Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|---|-----------------------|
| 3. | N/A Good condition Proper secondary containment Needs Maintenance Remarks Tu sheeted metering building. Building is in west Clean Cardition, lights 1 Fan working, Flow meters working, we intest | than tre |
| 4. | Discharge Structure and Appurtenances (4 9000 Conclition) N/A Good condition Needs Maintenance Remarks D.D wat In spect | 12 |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks Building in wead on close condition, we spills or larks, | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks Fuspell Line Basins devalency safgastion wells Dwg 2636319) and Dw-10C36320) Dw-9 had an | |
| | odor (possisty DePD) upon opening cover of well. well us in good condition. Dee-10 net operation at time of inspection due to constion of PUC PIPINT in the well clere to high organic consent rations. Pump Fre Per-10 left an ground in unsecred condition and possisty contouring ted with arganic contaminants per-10 our fore Casting in good condition. Smell-odor went when casing liftede | |
| | Also inspected nondering well 5 36210 and 36212 and an nondering on part of Lime Basins aroundwater in remained project. Body well 5 in good condition. as 36210 has well number marked on casing while well 15 only marked on casing while well | Na55 1911 36212 |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). In Specific Grandwaler mass removal and dewatering system, and medical assirtant as well as CERCL Treaturn + Plant the threaturn plant and medical surell Device (3632c) leas the treaturn clave to Contosion of well Device (3632c) leas not appearing clave to Contosion of well materials by DNAPL the well pump was laying an the ground and may be contaminated. The well pump should have been decontaminated and plant in a secure conclificion |
| B. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| I. SITE INFO | ORMATION |
|---|--|
| Site name: Groundwater Mass Removal System | Date of inspection: April 27, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| X Access controls | Monitored natural attenuation Groundwater containment Vertical barrier walls |
| Attachments: Inspection team roster attached II. INTERVIEWS (| |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date |

| 3. | Local regulatory authorities and respons office, police department, office of public h deeds, or other city and county offices, etc.) | nealth or environmental he Fill in all that apply. | ealth, zoning offi | ce, recorder of |
|-------|---|---|--------------------|-------------------------|
| | Agency LDPHE Contact Hen Voger Name Problems; suggestions; Report attached | Engineer | - 4 21 1k Date | 3 692-3383 Phone no. |
| | Problems; suggestions; Report attached _ | All OK except | enerasted | values |
| | AgencyContact | | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency | - | | |
| | Contact Name Problems; suggestions; Report attached | | | Phone no. |
| | Agency | 1601.0013 | | 2002 |
| | ContactName Problems; suggestions; Report attached _ | Title | Date | Phone no. |
| | | | | |
| 4. | Other interviews (optional) Report attac | ched. | | |
| | | | | |
| | | | | |
| | | | | |
| | | OVAL COMPOSE | A 1: 11 NT | |
| A. Fe | V. ACCESS AND INSTITUTIO | DNAL CONTROLS A | Applicable N/ | <u>A</u> |
| 1. | Fencing damaged Location show Remarks | vn on site map Gat | es secured | N/A |
| B. Ot | her Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown on sit | te map N/ | A |
| | | | | |

| C. Inst | itutional Controls (ICs) | | | | |
|---------|--|--|------------|----------|------------|
| 1. | Implementation and enformation Site conditions imply ICs not Site conditions imply ICs not Type of monitoring (e.g., see | ot properly implemented of being fully enforced elf-reporting, drive by) | Yes Yes | No No | N/A N/A |
| | Responsible party/agency _ Contact | | | | |
| | Name | Title | Date | , – | Phone no. |
| | Reporting is up-to-date Reports are verified by the l | ead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in dec Violations have been report Other problems or suggestion | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy Remarks_ | ICs are adequate ICs are inadec | | | N/A |
| D. Ger | agaral | | | | |
| 1. | Vandalism/trespassing | Location shown on site map No v | andalism e | vident | |
| 2. | Land use changes on site Remarks | N/A | | | |
| 3. | Land use changes off site Remarks_ | N/A | | | |
| | | | | | |

| | | VI. GENERAL SITE CONDI | TIONS | |
|--------------------------|------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| 1. Roads damaged Remarks | | Location shown on site map | Roads adequate | N/A |

| R O | ther Site Conditions |
|------|---|
| ъ. О | |
| | Remarks |
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| | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| A. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| C. T | reatment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) |
| 1. | Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers |
| | Filters Addition (a.g. sheletion good floorylant) |
| | Additive (e.g., chelation agent, flocculent) Others |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date |
| | Equipment properly identified |
| | Quantity of groundwater treated annually |
| | Quantity of surface water treated annually |
| | Remarks Encrutation nuted on values indication leakage |
| | Minor leatenge |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|--|---|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | _ |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | _ |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks | _ |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks | |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| | |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| I. SITE INF | ORMATION |
|--|--|
| Site name: CERCLA WTF / Lime Basins Extraction | Date of inspection: April 27, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| X Access controls X | Monitored natural attenuation Groundwater containment Vertical barrier walls Processes |
| Attachments: Inspection team roster attached | Site map attached |
| II. INTERVIEWS | (Check all that apply) |
| 1. O&M site manager | Title Date |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date |
| | |

| alth or environmenta | al health, zoning office | |
|----------------------|--|--|
| Title | Date | Phone no. |
| ed. | | |
| | | |
| | | |
| | | |
| | | |
| IAL CONTROLS | Applicable N/A | |
| | . | |
| on site map (| Gates secured | N/A |
| | | |
| Location shown on | n site map N/A | |
| - I | Title Title Title CAL CONTROLS On site map | Title Date Title Date Title Date AL CONTROLS Applicable N/A on site map Gates secured Location shown on site map N/A |

* /_c)

| C. Ins | titutional Controls (ICs) | | | | | | | - |
|--------|---|-----------|----------------------|----------------|------------|----------|------------|----|
| 1. | Implementation and enfo Site conditions imply ICs n Site conditions imply ICs n | not prope | erly implemented | | Yes Yes | No No | N/A N/A | |
| | Type of monitoring (e.g., s Frequency | | ting, drive by) | | | | | - |
| | Responsible party/agency Contact | | · | | | | | _ |
| | Name | | Title | | Date | - | Phone no. | _ |
| | Reporting is up-to-date Reports are verified by the | lead age | ncy | | Yes Yes | No No | N/A N/A | |
| | Specific requirements in de Violations have been repor Other problems or suggesti | ted | cision documents hav | e been met | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy Remarks | | e adequate Io | Cs are inadequ | ate | | N/A | 40 |
| D. Gei | neral | | | | | | | |
| 1. | Vandalism/trespassing Remarks | | | | ndalism e | vident | | |
| 2. | Land use changes on site Remarks | N/A | | y | | | | • |
| 3. | Land use changes off site Remarks | | | | | | | |
| | | W CF | INDRAY CYMP COS | | | | | |
| A Doo | A | VI. GE | ENERAL SITE CON | DITIONS | | | | |

· 63

| A. Ro | ads | Applicable | N/A | | |
|-------|-----------------|----------------------|----------------------------|----------------|-----|
| 1. | Roads Remark | damaged ks | Location shown on site map | Roads adequate | N/A |

| В. О | ther Site Conditions |
|---------------------------------------|--|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | VIII. VERTICAL BARRIER WALLS Applicable N/A |
| 1. | Settlement Location shown on site map Settlement not evident |
| | Areal extent Depth |
| | Remarks |
| 2. | Performance Monitoring Type of monitoring |
| •• | Performance not monitored |
| | Frequency Evidence of breaching |
| | Head differential |
| | Remarks |
| · · · · · · · · · · · · · · · · · · · | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| 4. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. P V | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks Well that was put out service temperarily for requires |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances |
| າດ. | Good condition. Needs Maintenance |
| υŋ Nŋ | A Remarks Just inside slurry wall strong samel, good coulding |
| /// | Spare Parts and Equipment |
| | Readily available Good condition Requires upgrade Needs to be provided Remarks |

| C. | Treatment System | Applicable | N/A | |
|----|--|---|--|-------------------------------------|
| 1. | Metals removal Air stripping Filters Additive (e.g., che Others Good condition Sampling ports pro Sampling/maintena Equipment properl Quantity of ground Quantity of surface | Needs Mainter perly marked and func ince log displayed and y identified water treated annually water treated annually | nation Bioremediation adsorbers nance tional up to date | |
| | Remarks | | | |
| 2. | | es and Panels (properly Good condition Needs | y rated and functional) s Maintenance | |
| 3. | Tanks, Vaults, Store N/A Remarks | | r secondary containment | Needs Maintenance |
| 4. | | and Appurtenances Good condition Needs | s Maintenance | |
| 5. | Chemicals and equ | (s) Good condition (esp. ro ipment properly stored | | Needs repair |
| 6. | Properly secured/lo All required wells | ring Well, do | Routinely sampled s Maintenance | Good condition N/A LB DW10 |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| | |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |
| | |
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| | |

| I. SITE INF | ORMATION |
|--|---|
| Site name: Groundwater Mass Removal System-STF | Date of inspection: April 27, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| X Access controls Institutional controls X Groundwater pump and treatment Surface water collection and treatment Other Luspeched South To | Monitored natural attenuation Groundwater containment Vertical barrier walls Link Form Plume Entradion Systems Lemberal Systems inspected as party Crack Site map attached (Check all that apply) |
| 1. O&M site manager Tony Lechance Rich R Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date |

| 3. | Local regulatory authorities and office, police department, office of deeds, or other city and county offi | public health or environs ces, etc.) Fill in all that a | mental health, zoning o apply. | es, emergency response office, recorder of |
|----------------|--|---|-----------------------------------|---|
| | Agency Euriron unh (?) Contact Rom Bertram Com | references Agency | 2M95 | |
| | Name Problems; suggestions; Report at | t t Title | Date | Phone no. |
| | Problems, suggestions, Report at | .tached | | |
| | Agency | | | |
| | Contact Name Problems; suggestions; Report at | | Date | Phone no. |
| | Agency | | | |
| | ContactName Problems; suggestions; Report at | Title tached | | Phone no. |
| | Agency | | | |
| | ContactName Problems; suggestions; Report at | Title | Date | Phone no. |
| 4. | Other interviews (optional) Rep | port attached. | | |
| | | | | |
| | | 15 | | |
| e _q | · · · · · · · · · · · · · · · · · · · | | | |
| | V. ACCESS AND INST | ITUTIONAL CONTRO | OLS Applicable | N/A |
| A. Fe | ncing | | | |
| 1. | Fencing damaged Locati Remarks | on shown on site map | Gates secured | N/A |
| B. Ot | her Access Restrictions | | | |
| 1. | Signs and other security measure Remarks | s Location show | wn on site map | N/A) |

| C | Institutional Controls (ICs) | | | | |
|----|---|------------|----------|------------|---|
| 1. | Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced | Yes Yes | No No | N/A N/A | |
| | Type of monitoring (e.g., self-reporting, drive by) Frequency | | | | - |
| | Responsible party/agency Rvo | | | | - |
| | Name Title | Date | • | Phone no. | |
| | Reporting is up-to-date Reports are verified by the lead agency | Yes Yes | No No | N/A N/A | |
| | Specific requirements in deed or decision documents have been met Violations have been reported Other problems or suggestions: Report attached | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy ICs are adequate ICs are inadeq | uate | | Ŋ/A | |
| | Adequacy ICs are adequate ICs are inadeq Remarks Access & Poble 15 limited | and co | utre | Teo | |
| D. | General | | | | |
| 1. | Vandalism/trespassing Location shown on site map No vandalism/trespassing | ndalism e | vident | | |
| 2. | Land use changes on site N/A Remarks Site is Still within NPL | | | | |
| 3. | Land use changes off site WA Remarks | | | | |
| | | | | | |
| | VI. GENERAL SITE CONDITIONS | | | | |
| A. | Roads Applicable N/A | | | | |
| 1. | Roads damaged Location shown on site map Roads Remarks | adequate | > | N/A | |

| B. O | ther Site Conditions |
|-------------|--|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. G | oundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| C. Tr | eatment System Applicable (N/A) Extraction system only |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) |
| | Others |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date |
| | Sampling/maintenance log displayed and up to date Equipment properly identified |
| | Quantity of groundwater treated annually |
| | Ouantity of surface water treated annually |
| | Remarks |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|----|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks Metering building inspected and no spills Observed and he aminal infestation observed |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks DiS wet in Spect |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks Melany building insulated, and was in clean on need Condition weters were greating |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks Tuggeold wells 01604 and 01685 (both montery) wells were in good condition |
| | Often wells were observed and were in good condition General Extraction system area is clean an neat with no Vegetation oungrowth. Sought crew was Saughing well 01685 and was wearing nitril glows, hand het and boots. Meterny building is in good Condition on outsid Lime Basins Groundwater Mass removal system was Inspealed as part of Basin A Nech System inspeakion |

| | XI. OVERALL OBSERVATIONS |
|----|---|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). In speakion consisted a the interior to lake the sociality and sociality are circle to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The speakion consisted a the interior to lake the social form of the social form. |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| I. SITE INFO | ORMATION |
|---|--|
| Site name: CERCLA WTF / Lime Basins Extraction | Date of inspection: April 27, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| X Access controls X | Ionitored natural attenuation Groundwater containment Vertical barrier walls Processes |
| Attachments: Inspection team roster attached II. INTERVIEWS (| * |
| | Check an that approy) |
| 1. O&M site manager | Title Date |
| 2. O&M staff Name Interviewed at site at office by phone Phone reproblems, suggestions; Report attached | Title Date |
| | |

| offi dee | cal regulatory authorities a ice, police department, office ds, or other city and county | e of public health or offices, etc.) Fill in | r environmental heal n all that apply. | th, zoning offic | |
|-------------|--|---|---|-------------------|-----------------------|
| Age Cor | ency OPHE ntact Hea Vagler Name | E | Ng inger Uritle | 11/2-) 10 Date | J 6 92-3383 Phone no. |
| Pro | blems; suggestions; Repor | rt attached | _otr | 25,700 - 10. | |
| Age Cor | ency ntact Name | | | | |
| Pro | Name blems; suggestions; Repor | rt attached | Title | Date | Phone no. |
| Age Cor | ency | | 31 No. 3040 - 400.00 | | |
| Pro | ntact Name Name blems; suggestions; Repor | rt attached | Title | Date | Phone no. |
| Age Cor | encytact | | | | |
| | ntact Name Name blems; suggestions; Repor | | | Date | Phone no. |
| 4. Oth | er interviews (optional) | Report attached. | | | |
| | | | | | |
| | | | | | |
| | V. ACCESS AND IN | STITUTIONAL (| CONTROLS App | olicable N/A | A |
| A. Fencing | | | | | |
| | cing damaged Locarks | cation shown on sit | e map Gates s | secured | N/A |
| B. Other Ac | ccess Restrictions | | | | |
| | ns and other security meast narks | ures Loca | ation shown on site n | nap N/A | A |

| C | . Institutional Controls (ICs) | | | | | |
|----|---|---------------------------------|------------|----------------|------------|---|
| 1. | Implementation and enfo Site conditions imply ICs r Site conditions imply ICs r | not properly implemented | Yes Yes | No No | N/A N/A | |
| | Frequency | elf-reporting, drive by) | | | | |
| | Responsible party/agency Contact | | | | | |
| | Name | Title | Date | - - | Phone no. | |
| | Reporting is up-to-date Reports are verified by the | lead agency | Yes Yes | No No | N/A N/A | |
| | Specific requirements in de Violations have been repor Other problems or suggesti | | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy Remarks | ICs are adequate ICs are inadeq | | | N/A | |
| | General | | | | | |
| 1. | | | andalism e | vident | | |
| 2. | Land use changes on site Remarks | N/A | | | | |
| 3. | Land use changes off site Remarks | N/A | | | | |
| | | | | | | _ |
| | | VI. GENERAL SITE CONDITIONS | | | | |
| Α. | Roads Applicable | N/A | | | | |

Location shown on site map

Roads adequate

N/A

Roads damaged Remarks

1.

| | Other Site Conditions |
|-------------|--|
| | Remarks |
| | |
| | |
| | ************************************** |
| | |
| | |
| | |
| | |
| | VIII. VERTICAL BARRIER WALLS Applicable N/A |
| 1. | Settlement Location shown on site map Settlement not evident |
| | Areal extent Depth Remarks |
| | Religins. |
| 2. | Performance Monitoring Type of monitoring |
| | Performance not monitored |
| | Frequency Evidence of breaching Head differential |
| | rieau uniciciual |
| | Remarks |
| | Remarks |
| | Remarks |
| | Remarks |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| A. G | Remarks |
| A. G | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A Pumps, Wellhead Plumbing, and Electrical |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 1. | IX. GROUNDWATER WATER REMEDIES Applicable N/A Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance |
| 1. | IX. GROUNDWATER WATER REMEDIES Applicable N/A Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances |
| 2. | IX. GROUNDWATER WATER REMEDIES Applicable N/A Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 1. | IX. GROUNDWATER WATER REMEDIES Applicable N/A Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance |

| Treatment System | Applicable | N/A | | | |
|---|---|---|--|--|---|
| Metals removal Air stripping Filters | Oil/water sepa Carb | ration on adsorber | | | |
| Additive (e.g., chelatic | | t) | | | |
| Sampling/maintenance Equipment properly id | ly marked and fund log displayed and entified | ctional up to date | | | |
| Quantity of groundwat Ouantity of surface wa | er treated annually ter treated annuall | v | | _ | |
| Remarks | 77 | | | | |
| Electrical Enclosures a N/A Goo Remarks | nd Panels (proper d condition Need | y rated and s Maintenar | functional) nce | | |
| N/A Goo | d condition Prope | | containment | Needs Maintenance | |
| N/A Goo | d condition Need | | nce | | |
| Chemicals and equipm | ent properly stored | i | | Needs repair | |
| Properly secured/locke | d Functioning | Routine | | Good condition N/A | |
| | Treatment Train (Check Metals removal Air stripping Filters Additive (e.g., chelation Others Good condition Sampling ports properly Sampling/maintenance Equipment properly id Quantity of groundwat Quantity of surface was Remarks Electrical Enclosures at N/A Good Remarks Tanks, Vaults, Storage N/A Good Remarks Discharge Structure an N/A Good Remarks Treatment Building(s) N/A Good Chemicals and equipm Remarks Monitoring Wells (pump Properly secured/locke All required wells loca | Treatment Train (Check components that Metals removal Oil/water sepa Air stripping Carb Filters Additive (e.g., chelation agent, flocculem Others Good condition Needs Mainte Sampling ports properly marked and fund Sampling/maintenance log displayed and Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually Remarks Electrical Enclosures and Panels (proper N/A Good condition Need Remarks Tanks, Vaults, Storage Vessels N/A Good condition Proper Remarks Discharge Structure and Appurtenances N/A Good condition Need Remarks Treatment Building(s) N/A Good condition (esp. re Chemicals and equipment properly stored Remarks Monitoring Wells (pump and treatment ref Properly secured/locked Functioning All required wells located Need | Treatment Train (Check components that apply) Metals removal Oil/water separation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually Remarks Electrical Enclosures and Panels (properly rated and N/A Good condition Needs Maintenan Remarks Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary Remarks Discharge Structure and Appurtenances N/A Good condition Needs Maintenan Remarks Treatment Building(s) N/A Good condition (esp. roof and door Chemicals and equipment properly stored Remarks Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routine All required wells located Needs Maintenan | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually Remarks Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Remarks Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled All required wells located Needs Maintenance | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually Remarks Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A |

| XI. OVERALL OBSERVATIONS | | | | | |
|--------------------------|--|--|--|--|--|
| A. | Implementation of the Remedy | | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | | |
| | | | | | |
| | | | | | |
| В. | Adequacy of O&M | | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | | |
| | | | | | |
| | | | | | |

| I. SITE INFORMATION | | | | |
|--|--|--|--|--|
| Site name: Groundwater Mass Removal System Date of inspection: April 27, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID : C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | |
| X Access controls | Monitored natural attenuation Groundwater containment Vertical barrier walls | | | |
| Attachments: Inspection team roster attached | | | | |
| II. INTERVIEWS | (Check all that apply) | | | |
| 1. O&M site manager | Title Date no | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | |
| | | | | |

| 3. | Local regulatory authorities and response office, police department, office of public he deeds, or other city and county offices, etc.) | ealth or environmental | and Tribal offices, of health, zoning offi | emergency response ice, recorder of |
|-------|---|------------------------|--|--|
| | Agency TCHP Contact Vincent Stewart Name | Title | Date | 720-322-1525 Phone no. |
| - | Problems; suggestions; Report attached _ | None | | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | Title | | Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| 4. | Other interviews (optional) Report attack | hed. | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTIO | NAL CONTROLS | Applicable N | /A |
| A. Fe | ncing | | | |
| 1. | Fencing damaged Location shows Remarks | | Gates secured | N/A |
| B. Ot | ther Access Restrictions | | - | |
| 1. | Signs and other security measures Remarks | Location shown on | site map N | /A |
| 1 | | | | |

| C. | Institutional Controls (ICs) | | 00 | | | | |
|----|--|----------------------|--------------|---------------------------------------|----------|------------|--|
| 1. | Implementation and enfor Site conditions imply ICs no Site conditions imply ICs no | ot properly implemen | | Yes Yes | No No | N/A N/A | |
| | Type of monitoring (e.g., see Frequency | | | | | | |
| | Responsible party/agency | | | · · · · · · · · · · · · · · · · · · · | | | |
| | Contact Name | | Title | Date | | Phone no. | |
| | Reporting is up-to-date Reports are verified by the | lead agency | | Yes Yes | No No | N/A N/A | |
| | Specific requirements in device Violations have been report Other problems or suggestion | ed | | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy Remarks | ICs are adequate | ICs are inad | | NHT S | N/A | |
| D. | General | | | | | | |
| 1. | Vandalism/trespassing Remarks | | | vandalism e | vident | | |
| 2. | Land use changes on site Remarks | N/A | | | | | |
| 3. | Land use changes off site Remarks | N/A | | | | | |
| | | | | | | | |

| | | VI. GENERAL SITE CONDI | TIONS | |
|----------|------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| 1. Roads | damaged | Location shown on site map | Roads adequate | N/A |

| B. Oth | ner Site Conditions |
|--------|---|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER WATER REMEDIES (Applicable N/A |
| A. Gro | oundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| C. Tre | atment System Applicable (N/A) |
| 1. | Treatment Train (Check components that apply) |
| | Metals removal Oil/water separation Bioremediation |
| | Air stripping Carbon adsorbers |
| | Filters |
| | Additive (e.g., chelation agent, flocculent) |
| | Others Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date |
| | Equipment properly identified |
| | Quantity of groundwater treated annually |
| | Quantity of surface water treated annually |
| | Remarks |
| | |

| Electrical Enc | losures and Panels (p | properly rated and functional) | |
|----------------|-----------------------|--|--|
| N/A | Good condition | Needs Maintenance | |
| Remarks | | | |
| | | | |
| | | | Needs Maintenance |
| Remarks | | | |
| | | | |
| N/A | Good condition | Needs Maintenance | |
| Remarks | - | | |
| Treatment Bu | ilding(s) | | |
| | | (esp. roof and doorways) | Needs repair |
| Chemicals as | | | |
| | | | |
| Monitoring W | ells (pump and treatm | nent remedy) | |
| Properly sec | ured/locked Functio | ning Routinely sampled | Good condition |
| All required | wells located | Needs Maintenance | N/A |
| Remarks We | 11 01685 | | |
| | | | |
| | N/A Remarks | N/A Good condition Remarks Tanks, Vaults, Storage Vessels N/A Good condition Remarks Discharge Structure and Appurter N/A Good condition Remarks Treatment Building(s) N/A Good condition Chemicals and equipment properly Remarks Monitoring Wells (pump and treatmer properly secured/locked) Function | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Remarks Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled All required wells located Needs Maintenance |

| | XI. OVERALL OBSERVATIONS | |
|----|---|--|
| A. | Implementation of the Remedy | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | |
| | | |
| В. | Adequacy of O&M | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | |

TAB J BASIN A NECK SYSTEM

| I. SITE INF | ORMATION |
|--|------------------------------------|
| Site name: Basin A Neck Treatment System | Date of inspection: April 27, 2010 |
| Location and Region: RMA Region VIII | EPA ID : C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| X Access controls Institutional controls X Groundwater pump and treatment Surface water collection and treatment Other Tuspeeded Basia A De System and Bestrook R. Attachments: Inspection team roster attached | no |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | |

| 3. | Local regulatory authorities and response ag office, police department, office of public health deeds, or other city and county offices, etc.) Fil | n or environmental hea | Tribal offices, emulting office | ergency response , recorder of |
|--------------|--|------------------------|---------------------------------|-----------------------------------|
| | Agency Environmental Protecta Contact Ron Bentram | in Agency | 4/27/10 | 312-6061 |
| | Name Problems; suggestions; Report attached | Title | Duto | |
| | Agency Contact | Title | Date | Phone no. |
| | Problems; suggestions; Report attached | 1100 | | |
| | Agency | | | |
| | Contact Name Problems; suggestions; Report attached | | Date | Phone no. |
| | Agency | | | |
| ı | Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| 4. | Other interviews (optional) Report attached | | | |
| | | | | |
| | | | | |
| | | Y CONTROLS A | pplicable N/A | |
| | V. ACCESS AND INSTITUTIONA | L CONTROLS A | pplicable N/A | |
| A. 1. | Fencing damaged Location shown or Remarks | n site map Gate | s secured | N/A) |
| B. | Other Access Restrictions | | | |
| 1. | | Location shown on site | e map N/A | |
| | | | | |

| C. | . Institutional Controls (ICs) | | | |
|----|---|------------|----------|------------|
| 1. | Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced | Yes Yes | No No | N/A N/A |
| | Type of monitoring (e.g., self-reporting, drive by) Frequency Responsible party/agency | | | |
| | Contact | | | |
| | Name Title | Date | ; | Phone no. |
| | Reporting is up-to-date Reports are verified by the lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in deed or decision documents have been met Violations have been reported Other problems or suggestions: Report attached | Yes Yes | No No | N/A N/A |
| 2. | · A · · | ıate | | N/A |
| D. | Remarks | | | |
| 1. | | ndalism e | vident | > |
| 2. | Land use changes on site N/A Remarks Oct Siale Army Mainlained are | ea | | |
| 3. | Land use changes off site N/A Remarks | | | |
| | | | | |
| | VI. GENERAL SITE CONDITIONS | | | |
| A. | Roads Applicable N/A | | | |
| 1. | Roads damaged Location shown on site map Roads Remarks | adequate | د | N/A |

| B. Other Site Conditions |
|---|
| Remarks |
| |
| |
| |
| |
| |
| |
| |
| IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| |
| C. Treatment System Applicable N/A |
| 1. Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| Additive (e.g., chelation agent, flocculent) Others |
| Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually |
| Remarks |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|--|------------------------|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks 16 tiu species | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks treatment building in clean and reat concliben, no leveling recent spills or leakt 1 no animal intestation | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance Remarks Properly Laparadient Monitoring well 5 35516 and 35512 at 3AU5. Both well 5 are in good conclined. | |
| | with Pad5, Protective casing, much cap are lock cours in present tag for 35516 was laying an ground. but much cap we marked. Gettraction 54 Sten was clear and free of clears are uppered. BAN5 boulding not stanting to be prepared for building upproduced Also in spected the Bedrock Ridge Extraction 54 Stem. Also in spected the Bedrock Ridge Extraction 54 Stem and vegetation. Inspected monitoring well 36567. The well condition of acceptable. Also inspected down gradient with acceptable. Also inspected down gradient well acceptable. Also inspected down gradient well. | lions Lions rell |
| | 36566. The well has been covered by to the order casing lid by soil but does not appear to be don | _ |

| | XI. OVERALL OBSERVATIONS |
|----|---|
| Α. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). In specific Consisted of visits to the Basin A Neck who Predrock I read with 1 plant and Basin A Neck are Predrock. Riche well Fields. The treatment of plant and well fields were in acceptable condition. However, some wells only had the well identification on the winer cap and not on the sector casing. The wall identification should be pet on a personal personal casing. Well 36566 appears to have been partly beautiful by Soil placement activities in the aven, and Should be |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| I. SITE INFORMATION | | | | | | |
|--|-----------------------------|--|--|--|--|--|
| Site name: Basin A Neck Treatment System Date of inspection: April 27, 2010 | | | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | | |
| Agency, office, or company leading the five-year review: RVO Weather/temperature: | | | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls X Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other | | | | | | |
| Attachments: Inspection team roster attached | Site map attached | | | | | |
| II. INTERVIEWS | (Check all that apply) | | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date no | | | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | | | | | | |

| 3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency re office, police department, office of public health or environmental health, zoning office, recorder deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|--|---|------------------|------------------------|---------------------------|
| | Agency TCHD Contact Vincent Stewart Name | FHS Title | <u>4/27/10</u> Date | 720-322-1529 Phone no. |
| | Problems; suggestions; Report attached | | | |
| | Agency Contact Name | Title | Data | Phone no. |
| | Problems; suggestions; Report attached | I itie | | |
| | Agency | | | |
| | Name Problems; suggestions; Report attached | Title | Date | |
| | Agency | | | |
| | Contact Name Problems; suggestions; Report attached | | Date | |
| 4. | Other interviews (optional) Report attache | ed. | | |
| | | | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTION. | AL CONTROLS | Applicable N/ | A |
| A. F | encing | | | |
| 1. | Fencing damaged Location shown of Remarks | on site map | Gates secured | N/A |
| B. O | ther Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown o | on site map N/A | A |

| C. Inst | titutional Controls (ICs) | | _ U | | | |
|---------|---|---------------------|----------------|------------|----------|------------|
| 1. | Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced Type of monitoring (e.g., self-reporting, drive by) Frequency | | | Yes Yes | No No | N/A N/A |
| | Responsible party/agency | | | | | |
| | Contact | | | | | |
| | Name Title | | | | • | Phone no. |
| | Reporting is up-to-date Reports are verified by the lead agency | | | | No No | N/A N/A |
| | Specific requirements in device Violations have been report Other problems or suggestion | ed | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy Remarks | ICs are adequate | ICs are inadeq | | | N/A |
| D. Ger | neral | | | | | |
| 1. | | Location shown on s | | andalism e | vident | |
| 2. | Land use changes on site Remarks | N/A | | | | |
| 3. | Land use changes off site Remarks | | | | | |
| | | | | | ···· | |

| | | VI. GENERAL SITE CONDI | TIONS | |
|--------------------------|------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| 1. Roads damaged Remarks | | Location shown on site map | Roads adequate | N/A |

| B. Other Site Conditions | | | | | |
|--------------------------|--|---|---|--|--|
| | Remarks | | _ | | |
| | | | - | | |
| | 10-1 | | - | | |
| | | | - | | |
| | | | - | | |
| | | | - | | |
| | | | | | |
| | TV CDOI | NDWATER WATER REMEDIES Applicable N/A | | | |
| | | | | | |
| A. Gro | oundwater Extraction \ | Vells, Pumps, and Pipelines Applicable N/A | | | |
| 1. | 70 | mbing, and Electrical required wells properly operating Needs Maintenance N/A | | | |
| 2. | Good condition | pelines, Valves, Valve Boxes, and Other Appurtenances Needs Maintenance | | | |
| 3. | | pment Good condition Requires upgrade Needs to be provided | | | |
| C. Tre | atment System | Applicable N/A | | | |
| 1. | Treatment Train (Che Metals removal Air stripping Filters | cck components that apply) Oil/water separation Carbon adsorbers | | | |
| | Additive (e.g., chela | ion agent, flocculent) | | | |
| | Good condition | Needs Maintenance | | | |
| | Sampling ports prop | erly marked and functional | | | |
| | Equipment properly | ce log displayed and up to date identified | | | |
| | Quantity of groundw | ater treated annually | | | |
| | • • | vater treated annually | | | |
| | Remarks | | - | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) | | | | |
|----|--|---|--|----------------------|--|
| | N/A | | Needs Maintenance | | |
| | Remarks | | | | |
| 3. | Tanks, Vaults N/A Remarks | | Proper secondary containmen | nt Needs Maintenance | |
| 4. | Discharge Str N/A Remarks | | Needs Maintenance | | |
| 5. | Treatment B | uilding(s) | (see reaf and doorways) | Needs repair | |
| | | and equipment properly | (esp. roof and doorways) y stored | iveeus repair | |
| 6. | Properly sec All required Remarks 35 | Vells (pump and treatmented/locked Function wells located 12 - Good Con | ning Routinely sampled Needs Maintenance | Good condition N/A | |

| XI. OVERALL OBSERVATIONS | | | |
|--------------------------|--|--|--|
| A. | Implementation of the Remedy | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | |
| | | | |
| | | | |
| В. | Adequacy of O&M | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | |

TAB K LWTS

| I. SITE INFORMATION | | | | | |
|--|------------------------------------|--|--|--|--|
| Site name: Landfill Wastewater Treatment System | Date of inspection: April 28, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO Weather/temperature: | | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment X Surface water collection and treatment X Other Landfill leachate, stormwater and decontamination wastewater collection and treatment | | | | | |
| Attachments: Inspection team roster attached | Site map attached | | | | |
| II. INTERVIEWS | (Check all that apply) | | | | |
| 1. O&M site manager Ren Beards Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | no | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date no | | | | |
| | | | | | |

| 3. | e, recorder of | | | |
|--------|--|-----------------------|----------------|-----------|
| | Agency Environmental Protection Contact Ron Bertram | n Agever RAM | 4/28/10 | 312-6061 |
| | Name Problems; suggestions; Report attached | Title | /Date/ | Phone no. |
| | Agency ContactName | Tial | Data | Dlanama |
| | Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency ContactName | mul. | | Diamagn |
| | Problems; suggestions; Report attached | | Date | Phone no. |
| | Agency Contact Name | Title | | Diamana |
| | Problems; suggestions; Report attached | | Date | Phone no. |
| 4. | Other interviews (optional) Report attached | ed. | | |
| | | | | |
| | | | | |
| | | | | |
| A For | V. ACCESS AND INSTITUTION | AL CONTROLS A | Applicable N/A | |
| A. Fei | Fencing damaged Location shown of Remarks Fencing 15 14 Plants | | es secured | N/A |
| B. Otl | ner Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown on sit | e map N/A |) |

| C. Ins | titutional Controls (ICs) | | | | | -· | | |
|--------|---|----------------|----------------|--------------|--------------|----------|------------|--|
| 1. | Implementation and enf Site conditions imply ICs Site conditions imply ICs | not properly i | | | Yes Yes | No No | N/A N/A | |
| | Type of monitoring (e.g., Frequency | | | | | | | |
| | Contact Name | | | | | | Phone no. | |
| 8 | Reporting is up-to-date Reports are verified by the | e lead agency | | | Yes Yes | No No | N/A N/A | |
| | Specific requirements in or Violations have been repo Other problems or suggest | rted | on documents h | ave been met | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy | ICs are ade | | ICs are inad | equate | | N/A | |
| D. Gen | Remarks | | • | | - | | | |
| 1. | Vandalism/trespassing Remarks | | | | vandalism e | vident | <u> </u> | |
| 2. | Land use changes on site Remarks | | | | | | | |
| 3. | Land use changes off site Remarks_ | e N/A | | | | | | |
| | | | | | | | | |
| | | VI. GENE | RAL SITE CO | ONDITIONS | | | | |
| A. Roa | ds Applicable | N/A | | | | | | |
| 1. | Roads damaged Remarks_ | Location sh | nown on site m | ap Roa | ads adequate |) | N/A | |
| | | | | | | | | |

| B. Other Site Conditions | | | | |
|--|--|--|--|--|
| Remarks | | | | |
| | | | | |
| | | | | |
| | | | | |
| IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A | | | | |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A | | | | |
| 1. Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks | | | | |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks | | | | |
| 3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks | | | | |
| | | | | |
| C. Treatment System Applicable N/A | | | | |
| 1. Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Carbon adsorbers Filters | | | | |
| Additive (e.g., chelation agent, flocculent)Others | | | | |
| Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date OEM Maural in Place dated 1999 Equipment properly identified identified and up to date OEM Maural in Place dated 1999 Equipment properly identified identified and up to date OEM Maural in Place dated 1999 Equipment properly identified identified and up to date OEM Maural in Place dated 1999 Equipment properly identified identified and up to date OEM Maural in Place dated 1999 Equipment properly identified identified and up to date OEM Maural in Place dated 1999 Equipment properly identified identified and up to date OEM Maural in Place dated 1999 Equipment properly identified identified identified and up to date OEM Maural in Place dated 1999 Equipment properly identified iden | | | | |
| Remarks | | | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|--------|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks Wood IN Special |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks Custs 15 5000 do La Chanentled and decommissioned |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance Remarks |
| | |
| D. Mon | nitoring Data NA |
| 1. | Monitoring Data Is routinely submitted on time Is of acceptable quality |
| 2. | Monitoring data suggests: Groundwater plume is effectively contained Contaminant concentrations are declining |

| | XI. OVERALL OBSERVATIONS | | | | |
|----|---|--|--|--|--|
| Α. | Implementation of the Remedy | | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The inspection included abservation a the treatment of the conditions found in the conditions for the conditions | | | | |
| В. | Adequacy of O&M | | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | | |

| ORMATION | | | | | |
|--|--|--|--|--|--|
| Date of inspection: April 27, 2010 | | | | | |
| EPA ID: C05210020769 | | | | | |
| Weather/temperature: | | | | | |
| Monitored natural attenuation Groundwater containment Vertical barrier walls decontamination wastewater collection and treatment | | | | | |
| Attachments: Inspection team roster attached Site map attached II. INTERVIEWS (Check all that apply) | | | | | |
| Title Date | | | | | |
| Title Date | | | | | |
| | | | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | |
|--------|--|-----------------|-------------------|-------------------------|
| | Agency COPHE Contact TCA VOICE Name | Title | 4/27/10 3 Date | 3 692-3385 Phone no. |
| | Problems; suggestions; Report attached | Allor | (PARAMONE BULLIA) | |
| | Agency Contact Name | Title | Date | Phone no. |
| | Problems; suggestions; Report attached | | Date | FHORE HO. |
| | AgencyContact | _ | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency Contact Name | Title | Dete | M |
| | Problems; suggestions; Report attached _ | I luc | Date | Phone no. |
| 4. | Other interviews (optional) Report attac | ched. | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTIO | ONAL CONTROLS A | Applicable N/A | A |
| A. Fei | ıcing | | | |
| 1. | Fencing damaged Location shows Remarks | | es secured | N/A |
| B. Otl | her Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | | e map N/A | 1 |
| | | | | |

| C. In | stitutional Controls (ICs) | | | | | | |
|-------|--|-------------------------|-----------------|------------|---------------|------------|--|
| 1. | Implementation and enfo Site conditions imply ICs n Site conditions imply ICs n | ot properly implemented | | Yes Yes | No No | N/A N/A | |
| | Type of monitoring (e.g., so Frequency | | | | | | |
| | Responsible party/agency Contact | | | | | | |
| | Name | Tit | le | Date | - | Phone no. | |
| | Reporting is up-to-date Reports are verified by the | lead agency | | Yes Yes | No No | N/A N/A | |
| | Specific requirements in de Violations have been report Other problems or suggestion | ted | | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy Remarks | ICs are adequate | ICs are inadequ | | | N/A | |
| D. Ge | neral | | | | | | |
| 1. | Vandalism/trespassing Remarks | | | dalism e | vident | | |
| 2. | Land use changes on site Remarks | N/A | | | | | |
| 3. | Land use changes off site Remarks | N/A | | | | | |
| | | | | | | | |

| A. Roads | Applicable | N/A | | |
|----------|------------------|----------------------------|----------------|-----|
| 1. Roads | s damaged rks | Location shown on site map | Roads adequate | N/A |

| B. Other Site Conditions | | | | |
|---|--|--|--|--|
| Remarks | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| IX. SURFACE WATER REMEDIES Applicable N/A | | | | |
| 8. Surface Water Collection Structures, Pumps, and Pipelines Applicable N/A | | | | |
| Collection Structures, Pumps, and Electrical Good condition Needs Maintenance Remarks | | | | |
| Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks | | | | |
| Spare Parts and Equipment Readily available Good condition G Requires upgrade Needs to be provided Remarks | | | | |
| | | | | |
| 7. Treatment System Applicable N/A | | | | |
| Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) | | | | |
| Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually | | | | |
| Remarks | | | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) | | | | |
|------|---|-----------------------|--|--|--|
| | N/A Good condition Needs Maintenance Remarks | | | | |
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment | Needs Maintenance | | | |
| | N/A Good condition Proper secondary containment Remarks | Needs Mannenance | | | |
| 4. | Discharge Structure and Appurtenances | | | | |
| | N/A Good condition Needs Maintenance Remarks | | | | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | Needs repair | | | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled All required wells located Needs Maintenance Remarks | Good condition N/A | | | |
| D. M | onitoring Data | | | | |

Is of acceptable quality

Contaminant concentrations are declining

Monitoring Data
Is routinely submitted on time

Monitoring data suggests:
Groundwater plume is effectively contained

1.

2.

| | XI. OVERALL OBSERVATIONS | | | |
|----|--|--|--|--|
| A. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | |
| | | | | |
| | | | | |
| | | | | |
| В. | Adequacy of O&M | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |
| | | | | |
| | | | | |
| | | | | |

LWTS

OSWER No. 9355.7-03B-P

Five-Year Review Site Inspection Checklist

| I. SITE INFORMATION | | | | | |
|--|----------------------|--|--|--|--|
| Site name: Landfill Wastewater Treatment System Date of inspection: April 27, 2010 | | | | | |
| Location and Region: RMA Region VIII EPA ID: C05210020769 | | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment X Surface water collection and treatment X Other Landfill leachate, stormwater and decontamination wastewater collection and treatment | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS (Check all that apply) | | | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone is Problems, suggestions; Report attached | Title Date | | | | |
| | | | | | |

| | Contact Name Problems; suggestions; Report attached | Z EMAF: 20 S | Date | Phone no. | .33 D EE |
|---|---|--------------|----------------|-----------|----------|
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. | |
| | Agency | Title | Date | Phone no. | · |
| | | | | | 1 |
| | Other interviews (optional) Report atta | ched. | | | |
| _ | Other interviews (optional) Report atta | ched. | | | |
| | Other interviews (optional) Report atta V. ACCESS AND INSTITUTIO | | Applicable N/A | | |

| C. Ins | titutional Controls (ICs) | | | | | | |
|--------|--|----------------------------|-------------|------------|----------|------------|---|
| 1. | Implementation and enfor Site conditions imply ICs n Site conditions imply ICs n | ot properly implemented | | Yes Yes | No No | N/A N/A | |
| | Type of monitoring (e.g., see | elf-reporting, drive by) | | | | | |
| | Responsible party/agency _Contact | | | | | | |
| | Name | Title | | Date | | Phone no. | |
| | Reporting is up-to-date Reports are verified by the | ead agency | | Yes Yes | No No | N/A N/A | |
| | Specific requirements in device Violations have been report Other problems or suggestion | | n met | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy Remarks_ | ICs are adequate ICs are | e inadequat | | | N/A | - |
| D. Gen | eral | | · | | | | _ |
| 1. | | Location shown on site map | No vand | alism e | vident | | |
| 2. | Land use changes on site Remarks | N/A | | | | | |
| 3. | Land use changes off site Remarks_ | N/A | | | | | |
| | | | | | | | |

| | | | VI. GENERAL SITE CONDI | 110110 | |
|----|----------------|---------------|----------------------------|----------------|-----|
| A. | Roads | Applicable | N/A | | |
| 1. | Roads Remar | damaged ks | Location shown on site map | Roads adequate | N/A |

| B. Oth | er Site Conditions |
|---------|--|
| | Remarks |
| | |
| | |
| | |
| | |
| | IX. SURFACE WATER REMEDIES Applicable N/A |
| B. Sur | face Water Collection Structures, Pumps, and Pipelines Applicable N/A |
| 1. | Collection Structures, Pumps, and Electrical Good condition Needs Maintenance Remarks |
| 2. | Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition G Requires upgrade Needs to be provided Remarks |
| | |
| C. Trea | atment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| | Additive (e.g., chelation agent, flocculent) Others |
| | Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified |
| | Quantity of groundwater treated annually Quantity of surface water treated annually Remarks |
| | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|---|-------------------|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Remarks_ | Needs Maintenance |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | Needs repair |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled All required wells located Needs Maintenance Remarks | N/A |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |
| | |

TAB L NORTH BOUNDARY CONTAINMENT SYSTEM

| I. SITE INF | ORMATION |
|---|--|
| Site name: North Boundary System | Date of inspection: April 27th, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| ★Access controls ★ | Monitored natural attenuation Groundwater containment Vertical barrier walls |
| Attachments: Inspection team roster attached | Site map attached |
| II. INTERVIEWS (| Check all that apply) |
| 1. O&M site manager Tony Lachere Rich Beau Name Interviewed at site at office by phone Phone r Problems, suggestions; Report attached | 10 |
| Name Interviewed at site at office by phone Phone n Problems, suggestions; Report attached | Title Date |

| 3. | Local regulatory authorities and responsible, police department, office of publiced, or other city and county offices, | olic health or environmentation.) Fill in all that apply | al health, zoning office. | mergency response ce, recorder of |
|--------|--|--|---------------------------|--------------------------------------|
| | Agency Eurivoundal Pro Contact Ron Bentrum Name Problems; suggestions; Report attach | | | 3/2 606 / Phone no. |
| | Agency Contact Name Problems; suggestions; Report attach | Title | | Phone no. |
| | Agency | Title | Date | Phone no. |
| | Agency | Title | Date | Phone no. |
| 4. | Other interviews (optional) Report | attached. | | |
| | | | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITU | TIONAL CONTROLS | Applicable N/ | A |
| A. Fen | cing | | -17 | |
| 1. | Fencing damaged Location s Remarks | shown on site map | Gates secured | N/A |
| B. Oth | er Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown o | n site map N/ | A) |

| C. Ins | titutional Controls (ICs) | | | | | |
|--------|---|--|-----------------|------------|----------------|------------|
| 1. | Implementation and enforcer Site conditions imply ICs not p Site conditions imply ICs not b Type of monitoring (e.g., self-r | roperly implemented eing fully enforced | | Yes Yes | No No | N/A N/A |
| | Responsible party/agency | | | | | |
| | ContactName | Title | | Date | - - | Phone no. |
| | Reporting is up-to-date Reports are verified by the lead | agency | | Yes Yes | No No | N/A N/A |
| | Specific requirements in deed of Violations have been reported Other problems or suggestions: | | ve been met | Yes Yes | No No | N/A N/A |
| 2. | Damanla | - | Cs are inadequa | te | | N/A |
| D. Gei | | | | | | |
| 1. | Vandalism/trespassing Lo Remarks | cation shown on site map | No vano | dalism e | vident | <u> </u> |
| 2. | Remarks Octs | A Lyny reamb | A Genra | lveq | | |
| 3. | Land use changes off site N/Remarks | A | | | | |
| | VI. | GENERAL SITE CON | IDITIONS | | | |
| A. Roa | ds Applicable N/A | A | | | | |
| 1. | Roads damaged Lo Remarks | cation shown on site map | Roads a | dequate | > | N/A |

| В. | Other Site Conditions |
|----|---|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| | |
| A. | Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| | Some Salmation well 12aulto on closed to weather Conditions |
| | but other would are open - partly to keep award vesting to a winite |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| C. | Treatment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation |
| | Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers (UV Oxidation) |
| | Filters |
| | Additive (e.g., chelation agent, flocculent) |
| | Others Good condition Needs Maintenance |
| | Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date OEM Manual in Place daled 200 Equipment properly identified Version is Most recent per T. Ceclusee |
| | Quantity of groundwater treated annually |
| | Quantity of surface water treated annually |
| | Remarks |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|---|-------------------------------|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks ハウナ ハス アルシートル | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks Treatment by ilding Clean, Free of debris. Inspection of pent sought Pout worked Possible organic greater on botton of tubing reco | ours ours |
| 6. | Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks In specific up greatent nonitying well 24101. There is No protective ce sing an well well cap was in place and well | Tag |
| | was infact. In spected well 23119 (upgradient Moniforni found protective casing, pad, cap and outer cover to be in a condition well veerlas is on inside of well cap. Estrostan well area is true of olibris and veget is under control. | ng well) captable abovi |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The inspection for the NBCS involved observation of the inspection for the NBCS involved observation of the frameward cup gradient released. Der formance cuchen quality wells. Tesure: Per formance center quality wells. Found to be destroyed. The well cues also found to be in the same condition during the 2005 five year per inches this observation suggests that rentile inell inspection and repair is not being conducted in an effective manner. |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| I. SITE INFO | ORMATION |
|--|--|
| Site name: North Boundary Treatment System | Date of inspection: April 27, 2010 |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: |
| X Access controls X C | Monitored natural attenuation Groundwater containment Tertical barrier walls |
| Attachments: Inspection team roster attached | Site map attached |
| II. INTERVIEWS (| Check all that apply) |
| 1. O&M site manager Name Interviewed at site at office by phone Phone problems, suggestions; Report attached | Title Date |
| 2. O&M staff Name Interviewed at site at office by phone Phone is Problems, suggestions; Report attached | Title Date |

| 3. | Local regulatory authorities and respons office, police department, office of public h deeds, or other city and county offices, etc.) | ealth or environmenta | al health, zoning of | |
|----|---|-----------------------|----------------------|-------------------------|
| | Agency CAPAE Contact Fiew Vocake Name Problems; suggestions; Report attached | Engineer All OK | 4 27 10 Date | 3 692-3383 Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached _ | Title | Date | Phone no. |
| | Agency | Title | Date | Phone no. |
| | Agency | Title | Date | Phone no. |
| 4. | Other interviews (optional) Report attac | ched. | · | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTIO | NAL CONTROLS | Applicable N | J/A |
| A. | Fencing | | · · | |
| 1. | Fencing damaged Location show Remarks | | Gates secured | N/A |
| В. | Other Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown or | n site map N | J/A |
| | | | | |

| 1. | Implementation and enfor | rcement | | | | |
|------------|---|---------------------------------------|---------------------|------------|----------|----------|
| | Site conditions imply ICs n | | ented | Yes | No | N/A |
| | Site conditions imply ICs not being fully enforced | | | | No | N/A |
| | Type of monitoring (e.g., self-reporting, drive by) Frequency | | | | | |
| | Responsible party/agency | · · · · · · · · · · · · · · · · · · · | | | | |
| | Contact Name | | Title | Dat | <u> </u> | Phone no |
| | Reporting is up-to-date | | | Yes | No | N/A |
| | Reports are verified by the | lead agency | | Yes | No | N/A |
| | Specific requirements in de | ed or decision docu | ments have been met | Yes | No | N/A |
| | Violations have been report | | | Yes | No | N/A |
| | Other problems or suggestic | | ttached | | | |
| 2. | Adequacy Remarks | ons: Report at | ICs are inadeq | | | N/A |
| 2. D. G | Adequacy Remarks | ons: Report at | ICs are inadeq | | | |
| | Adequacy Remarks | ICs are adequate Location shown o | ICs are inadeq | 2 | | |
| D. C | Adequacy Remarks General Vandalism/trespassing | ICs are adequate Location shown o | ICs are inadeq | andalism (| evident | |

| | | VI. GENERAL SITE CONDI | TIONS | |
|----------|------------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| 1. Roads | s damaged rks | Location shown on site map | Roads adequate | N/A |

| B. Other Site Conditions | |
|--|--|
| Remarks | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| IX. GROUNDWA | TER WATER REMEDIES Applicable N/A |
| A. Groundwater Extraction Wells, l | Pumps, and Pipelines Applicable N/A |
| D | , and Electrical ed wells properly operating Needs Maintenance N/A |
| Good condition Needs | , Valves, Valve Boxes, and Other Appurtenances Maintenance |
| 3. Spare Parts and Equipment Readily available Remarks | ood condition Requires upgrade Needs to be provided |
| | 1. 11 N/A |
| C. Treatment System A | pplicable N/A |
| 1. Treatment Train (Check con | |
| Metals removal Air stripping | Dil/water separation Bioremediation Carbon adsorbers |
| Filters | Curbon ausorotis |
| Additive (e.g., chelation age | nt, flocculent) |
| Others | |
| Good condition 1 Sampling ports properly ma | Needs Maintenance |
| Sampling ports properly ma | |
| Equipment properly identifi | |
| Quantity of groundwater tre | ated annually |
| Quantity of surface water tr | eated annually |
| Kemarks | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|----|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

TU4D NB

OSWER No. 9355.7-03B-P

Five-Year Review Site Inspection Checklist

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

| I. SITE INF | ORMATION | | | |
|---|--|--|--|--|
| Site name: North Boundary Treatment System | Date of inspection: April 27, 2010 | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | |
| X Access controls X G | Monitored natural attenuation Groundwater containment Vertical barrier walls | | | |
| Attachments: Inspection team roster attached II. INTERVIEWS | <u> </u> | | | |
| | Y | | | |
| 1. O&M site manager | Title Date | | | |
| 2. O&M staff Title Date | | | | |
| Interviewed at site at office by phone Phone Problems, suggestions; Report attached | no | | | |
| | | | | |

WELL 24101

| 3. | Local regulatory authorities and responsible office, police department, office of public deeds, or other city and county offices, etc. | health or environmer | ntal health, zoning | |
|------|--|--------------------------------------|---------------------|-----------|
| | Agency The County HEALTH C Contact No LOW MA SCALENA 2 Name Problems; suggestions; Report attached | PAMA FIZED SA Title PAME OK NO | Date | Phone no. |
| | Agency | Title | Date | , |
| | Agency | - Title | Date | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | |
| 4. | Other interviews (optional) Report atta | ched. | | |
| | | | | |
| A IF | V. ACCESS AND INSTITUTIO | ONAL CONTROLS | S Applicable | N/A |
| 1. | Fencing damaged Location show Remarks | vn on site map | Gates secured | N/A |
| В. О | Other Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown | | N/A |

| C. Ins | titutional Controls (ICs) | | | | | | |
|--------|--|--------------------------|---------------|------------|-------------|------------|---------------|
| 1. | Implementation and enfor Site conditions imply ICs no Site conditions imply ICs no | ot properly implemente | | Yes Yes | No No | N/A N/A | |
| | Type of monitoring (e.g., see | elf-reporting, drive by) | | | | | |
| | Responsible party/agency | | | | | | |
| | ContactName | | Title | Date | | Phone no. | |
| | Reporting is up-to-date Reports are verified by the | ead agency | | Yes Yes | No No | N/A N/A | |
| | Specific requirements in de Violations have been report Other problems or suggestion | ed | | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy | ICs are adequate | ICs are inade | | | N/A | |
| | Remarks | | | | | | |
| D. Gen | neral | | | | | | |
| 1. | Vandalism/trespassing Remarks | | | andalism e | vident | | |
| 2. | Land use changes on site Remarks | N/A | | | | | |
| 3. | Land use changes off site Remarks | | | | | | |
| | | | | | | | $\overline{}$ |

| _ | | VI. GENERAL SITE CONDI | TIONS | |
|----------|------------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| 1. Road | s damaged rks | Location shown on site map | Roads adequate | N/A |

| B Oth | ner Site Conditions |
|--------|---|
| D. Oli | Remarks |
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| A. Gr | oundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| C. Tre | eatment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) |
| | Metals removal Oil/water separation Bioremediation |
| | Air stripping Carbon adsorbers |
| | Filters |
| | Additive (e.g., chelation agent, flocculent) |
| | Others Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date |
| | Equipment properly identified |
| | Quantity of groundwater treated annually |
| | Quantity of surface water treated annually |
| | Remarks |
| | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|--|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks | |

| XI. OVERALL OBSERVATIONS | | | |
|--------------------------|--|--|--|
| A. | Implementation of the Remedy | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | |
| | | | |
| | | | |
| | | | |
| В. | Adequacy of O&M | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | |
| | | | |
| | | | |
| | | | |

TAB M NORTHWEST BOUNDARY CONTAINMENT SYSTEM

| I. SITE INFORMATION | | | | | |
|--|-----------------------------|--|--|--|--|
| Site name: Northwest Boundary Treatment System Date of inspection: April 27, 2010 | | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls X Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS (| Check all that apply) | | | | |
| 1. O&M site manager Tony Lackana / Rick Bands 2 4/21/10 Name Title Date Interviewed at site at office by phone Phone no. Problems, suggestions; Report attached | | | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone reproblems, suggestions; Report attached | Title Date | | | | |

| 3. | office, police department, office of public health deeds, or other city and county offices, etc.) Fil | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|----------|---|--|------------------------|-----------|--|--|
| | Agency Europental Protection Contact Rou Bertvarm Name Problems; suggestions; Report attached | | <u>4/27/10</u> Date | | | |
| | Agency Contact Name Problems; suggestions; Report attached | | Date | Phone no. | | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | | Phone no. | | |
| | Agency Contact Name Problems; suggestions; Report attached | | Date | Phone no. | | |
| 4. | Other interviews (optional) Report attached. | | | | | |
| | | | | | | |
| | V. ACCESS AND INSTITUTIONAL | L CONTROLS | Applicable N/. | A | | |
| A. 1. | Fencing Fencing damaged Location shown on Remarks | site map G | ates secured | N/A) | | |
| В. | Other Access Restrictions | | | | | |
| 1. | | ocation shown on | site map N/A | | | |

| 1. | Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced Type of monitoring (e.g., self-reporting, drive by) Frequency | | | | |
|---------------------------------|---|----------------------------|----------------|----------|------------|
| | Responsible party/agency Contact | | | | |
| | Name | Title | Date |) | Phone no. |
| | Reporting is up-to-date Reports are verified by the | lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in de Violations have been repor Other problems or suggesti | | met Yes Yes | No No | N/A N/A |
| ng akacan salam natang salam sa | | | | | |
| 2. | Adequacy Remarks | ICs are adequate ICs are i | inadequate | | N/A |
| D. G | eneral | | | | |
| 1. | Vandalism/trespassing Remarks | | No vandalism e | vident |) |
| 2. | Land use changes on site Remarks のいもらばん | N/A Arm Mandand A | Vea | | |
| 3. | Land use changes off site Remarks_ | (NA) | | | |
| | | | | | |
| | | VI. GENERAL SITE CONDITIO | ONS | | |
| A. R | pads Applicable | N/A | | | |
| 1. | Roads damaged Remarks | Location shown on site map | Roads adequate | | N/A |
| | | | | | |

C. Institutional Controls (ICs)

| B. Other Site Conditions | | | | |
|--------------------------|---|--|--|--|
| B. Cin | Remarks | | | |
| | | | | |
| | | | | |
| | IX. GROUNDWATER/SURFACE WATER REMEDIES Applicable N/A | | | |
| A. Grou | undwater Extraction Wells, Pumps, and Pipelines Applicable N/A | | | |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition (All required wells properly operating) Needs Maintenance N/A Remarks | | | |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks All Value Vaulty Sor extraction are theory evell 5 are in good condition with closes closed but not locked | | | |
| 3. | Spare Parts and Equipment (Readily available) Good condition Requires upgrade Needs to be provided Remarks | | | |
| | | | | |
| C. Trea | tment System Applicable N/A | | | |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others | | | |
| | Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date O FM Marva (in place date) Sampling/maintenance log displayed and up to date O FM Marva (in place date) Sampling/maintenance log displayed and up to date O FM Marva (in place date) Sampling/maintenance log displayed and up to date O FM Marva (in place date) Sampling/maintenance log displayed and up to date O FM Marva (in place date) Sampling from the place date O FM Marva (in place date) Sampling from | | | |

| Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|--|
| Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks |
| Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks |
| Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks Treatment building Clean, no spills an leaks of served Free of clean's and no amnal infestation |
| Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition (All required wells located) Needs Maintenance N/A Remarks Fuspected upgradient Monitoring well 22053. Well was in acceptable Condition with well pad protection |
| Casing and municipand outer well cover in places well I'd ever uniter or inside of inver casing Cap Inspeeld upgradient pointuring well 22081 and well was in good condition with Pad, protection casing, inver cap and cover in place, well ID was painted an cossing. Extraction well, 210 is in clean condition on Free of delaris and vegetation |
| |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|---|--------------|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | Needs repair |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled All required wells located Needs Maintenance Remarks | N/A |

| XI. OVERALL OBSERVATIONS | | | |
|--------------------------|---|--|--|
| A. | Implementation of the Remedy | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). Frequency Plant DWBCS frequent Plant and Selected in gradient performance work formy every the treatment plant was found to be in acceptable condition. The wells were also IN acceptable condition, there are well wad the well plantification on the inside of the well condition of the performance will be a first the could be and the casing or other permanent part of the curell. | | |
| В. | Adequacy of O&M | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | |

| I. SITE INFORMATION | | | | | |
|--|------------------------|--|--|--|--|
| Site name: Northwest Boundary Treatment System Date of inspection: April 27, 2010 | | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls X Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS (| (Check all that apply) | | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone problems, suggestions; Report attached | Title Date | | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone reproblems, suggestions; Report attached | Title Date | | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|--------|--|------------------------|-------------------|--|--|
| | Agency CAPHE Contact Key Voglet Name Problems: suggestions: Report attached | Engineer | 4/27/10 3 Date | \\(\gamma\)_\(\sigma\) \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | |
| | Problems; suggestions; Report attached _ | ANOR | | | |
| | Agency ContactName | | Date | Phone no. | |
| | Problems; suggestions; Report attached | 1100 | | | |
| | Agency Contact Name | | | | |
| | Name Problems; suggestions; Report attached | Title | Date | | |
| | Agency ContactName | | | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. | |
| 4. | Other interviews (optional) Report attack | hed. | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | V. ACCESS AND INSTITUTION | NAL CONTROLS AF | plicable N/A | | |
| A. Fen | cing | | | | |
| 1. | Fencing damaged Location shown Remarks | n on site map Gates | secured | N/A | |
| B. Oth | er Access Restrictions | | | | |
| 1. | Signs and other security measures Remarks | Location shown on site | map N/A | | |

| C. Institutional Controls (ICs) | | | | | | |
|---------------------------------|--|---|------------|----------|------------|-----------|
| 1. | Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced Type of monitoring (e.g., self-reporting, drive by) | | | | | |
| | Responsible party/agency | | | | | |
| | ContactName | Title | Date | | Phone no. | |
| | Reporting is up-to-date Reports are verified by the | e lead agency | Yes Yes | No No | N/A N/A | |
| | Specific requirements in d Violations have been repo Other problems or suggest | | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy Remarks | Adequacy ICs are adequate ICs are inadequate N/A Remarks | | N/A | | |
| D. | General | | | | | MATTERIAL |
| 1. | | Vandalism/trespassing Location shown on site map No vandalism evident Remarks | | | | |
| 2. | Land use changes on site Remarks | N/A | | | | |
| 3. | Land use changes off site Remarks | · N/A | | | | Rannesson |
| | | AN CHAIRD AT CALL COMPANYONG | | | | - |
| | No. 1 1 1 1 | VI. GENERAL SITE CONDITIONS | | | | |
| | Roads Applicable | N/A | _ | | | |
| 1. | Roads damaged | Location shown on site map Roads | adequate | | N/A | |

| B. Other Site Conditions | - Constitution of the Cons |
|---|--|
| Remarks | |
| | |
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| | Marie 1997 |
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| | |
| | |
| IX. GROUNDWATER WATER REMEDIES Applicable N/A | |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A | |
| 1. Pumps, Wellhead Plumbing, and Electrical | |
| Good condition All required wells properly operating Needs Maintenance N | /A |
| Remarks | |
| | |
| | |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances | |
| Good condition Needs Maintenance | |
| Remarks | |
| | |
| 3. Spare Parts and Equipment | |
| Readily available Good condition Requires upgrade Needs to be pro- | ovided |
| Remarks | |
| | |
| | |
| C. Treatment System Applicable N/A | |
| 1. Treatment Train (Check components that apply) | |
| Metals removal Oil/water separation Bioremediation | |
| Air stripping Carbon adsorbers | |
| Filters | |
| Additive (e.g., chelation agent, flocculent) | |
| Others | |
| Good condition Needs Maintenance | |
| Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date | |
| Equipment properly identified | |
| Quantity of groundwater treated annually | |
| Quantity of surface water treated annually | |
| Remarks | |
| | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|--|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks | |

| | XI. OVERALL OBSERVATIONS | | | |
|----|--|--|--|--|
| A. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | |
| | | | | |
| В. | Adequacy of O&M | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |

7CH) NWBTS OSWER No. 9355.7-03B-P

Five-Year Review Site Inspection Checklist

| I. SITE INFORMATION | | | | |
|--|------------------------------------|--|--|--|
| Site name: Northwest Boundary Treatment System | Date of inspection: April 27, 2010 | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls X Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other | | | | |
| Attachments: Inspection team roster attached | Site map attached | | | |
| II. INTERVIEWS (Check all that apply) | | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | |
| Cooled @ Dwells | | | | |
| 22081 | | | | |

| 3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency responding, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | |
|---|---|-----|
| | Agency This Date Phone no. | 152 |
| | Problems; suggestions; Report attached Who are No Community | |
| | Agency | |
| | Contact Name Title Date Phone no. Problems; suggestions; Report attached | |
| | Agency Contact Name Title Date Phone no. | |
| | Name Title Date Phone no. Problems; suggestions; Report attached | |
| | Agency Contact | |
| | Name Title Date Phone no. Problems; suggestions; Report attached | |
| 4. | Other interviews (optional) Report attached. | |
| | | - |
| | | |
| | V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A | |
| A. | Fencing | |
| 1. | Fencing damaged Location shown on site map Gates secured N/A Remarks | |
| В. | Other Access Restrictions | |
| 1. | Signs and other security measures Location shown on site map N/A Remarks_ | |

| C. | Institutional Controls (ICs) | | | A-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1 | |
|----|--|---|------------|---|------------|
| 1. | Implementation and enformation Site conditions imply ICs in Site conditions imply ICs in Type of monitoring (e.g., see Frequency | ot properly implemented oot being fully enforced elf-reporting, drive by) | Yes Yes | No No | N/A N/A |
| | Responsible party/agency | | | | |
| | ContactName | Title | Date | | Phone no. |
| | Reporting is up-to-date Reports are verified by the | lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in de Violations have been report Other problems or suggestion | | Yes Yes | No No | N/A N/A |
| | | | | | |
| 2. | Adequacy Remarks | ICs are adequate ICs are inadeq | | | N/A |
| D. | General | | | | |
| 1. | | Location shown on site map No va | andalism e | vident | |
| 2. | Land use changes on site Remarks | N/A | | | |
| 3. | Land use changes off site Remarks | N/A | | | |
| | | | | | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| Α. | Roads Applicable | N/A | | | |
| 1. | Roads damaged Remarks | Location shown on site map Road | s adequate | | N/A |

| B OH | ner Site Conditions |
|--------|---|
| D. Oth | |
| | Remarks |
| | |
| | |
| | |
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| | |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| A. Gr | oundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A |
| | Remarks |
| | |
| | |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances |
| | Good condition Needs Maintenance Remarks |
| | TOHUINO |
| 3. | Spare Parts and Equipment |
| - 1 | Readily available Good condition Requires upgrade Needs to be provided |
| | Remarks |
| | |
| C Tre | atment System Applicable N/A |
| | |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation |
| | Air stripping Carbon adsorbers |
| | Filters |
| | Additive (e.g., chelation agent, flocculent) Others |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date |
| | Equipment properly identified Overtity of groundwater treated appually |
| | Quantity of groundwater treated annually Quantity of surface water treated annually |
| | Remarks |
| | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|--|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks | |

| | XI. OVERALL OBSERVATIONS | | | |
|----|--|--|--|--|
| A. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | |
| | | | | |
| | | | | |
| В. | Adequacy of O&M | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |

TAB N OGITS TREATMENT SYSTEM

| I. SITE INFORMATION | | | |
|--|------------------------------------|--|--|
| Site name: OGITS Treatment System | Date of inspection: April 27; 2010 | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X'Access controls Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other Both the OGITS Tealment Plant and First Creek Lityroctan system were included in this juspection | | | |
| Attachments: Inspection team roster attached Site map attached | | | |
| II. INTERVIEWS (Check all that apply) | | | |
| I. O&M site manager Tany Lacharal Rich Boudslee 4/27/10 Name Title Date Interviewed at site at office by phone Phone no. Problems, suggestions; Report attached | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone n Problems, suggestions; Report attached | Title Date | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | |
|--------|--|-----------------------|------------------------|--|
| | Agency Enumon puntal Prol Contact Ron Bertram Name | rection Agence | 4 4/27/cc | 312-6061 |
| | Name Problems; suggestions; Report attached | | | Phone no. |
| | Agency ContactName | | - D.4 | Dharana |
| | Name Problems; suggestions; Report attached | | | |
| | Agency Contact Name | | | Dharana |
| | Name Problems; suggestions; Report attached | | Date | Phone no. |
| | Agency Contact Name | | | Dl |
| | Name Problems; suggestions; Report attached | | Date | |
| 4. | Other interviews (optional) Report attached | ed. | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTION | JAL CONTROLS A | Applicable N/A | <u> </u> |
| A. Fen | | | | Annual manufacture de la company de la compa |
| 1. | Fencing damaged Location shown | on site map Gate | es secured at Treal | mut Plant |
| B. Oth | ner Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown on sit | re map N/A | <u></u> |

| C | Institutional Controls (ICs) | | | |
|----|---|--|----------|------------|
| 1. | Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced | Yes Yes | No No | N/A N/A |
| | Type of monitoring (e.g., self-reporting, drive by) Frequency Responsible party/agency | | | |
| | Contact Title | Date | | Phone no. |
| | Name | Dut | | |
| | Reporting is up-to-date Reports are verified by the lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in deed or decision documents have been met Violations have been reported Other problems or suggestions: Report attached | Yes Yes | No No | N/A N/A |
| 2. | Adequacy ICs are adequate ICs are inadec | _[uate] | | N/A |
| T) | Remarks | | | |
| | General | andalism e | reidon* | |
| 1. | Vandalism/trespassing Location shown on site map Remarks | | | |
| 2. | Land use changes on site N/A Remarks_ | | | |
| 3. | Land use changes off site N/A Remarks | | | |
| | | CANDON COMMISSION OF THE PROPERTY OF THE PROPE | | |
| | VI. GENERAL SITE CONDITIONS | | | |
| Α. | Roads Applicable N/A | | | |
| 1. | Roads damaged Location shown on site map Road Remarks | s adequate | ·> | N/A |

| B. Other Site Conditions |
|---|
| Remarks |
| |
| |
| |
| |
| |
| |
| |
| IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| Som Expaction and pelicips well voults are show the |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks 5000000000000000000000000000000000000 |
| 3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| |
| C. Treatment System Applicable N/A |
| 1. Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| Additive (e.g., chelation agent, flocculent) Others |
| Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date 0 5 M Mawal in Place 15 From Equipment properly identified Quantity of groundwater treated annually Ouantity of surface water treated annually |
| Remarks |

| 2. | N/A Good condition Needs Maintenance Remarks | |
|----|--|-------------|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks Not iuspecteD | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Needs repair Chemicals and equipment properly stored Remarks Som water an floor at time of Uisi't but no learn condition, Firee of alexy | 13 |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks The specied Upgradient wan forms wells 37075 | <i>'</i> ,, |
| | acceptable candition. Books wells were tagged as the well vender. The extrection well Field was Free a clebris. |)14h |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The specific Con Sisted of Observations of the OGFTS treatment plant and appropriant very forcing wells in the First Cr. Offreetian System the Condition of the new toring excils and treatment plant evere occaptable thousand, the OFM Manual Africal Controlled version of the OPM Manual Shareld be maintained set the Inches of Manual |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| I. SITE INFORMATION | | | | |
|--|------------------------------------|--|--|--|
| Site name: OGITS Treatment System | Date of inspection: April 29, 2010 | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | |
| II. INTERVIEWS (Check all that apply) | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | no | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | no | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|-------|---|--|-------------------|--|-------------------------|
| | Agency CDPHE Contact Key Voller Name Problems; suggestions; Report | attached A | Engineer Title | 4/27/10 Date | 7 (92-3383 Phone no. |
| | 1 Toblems, suggestions, report | | 1 311 | | |
| | Agency ContactName | | Title | Date | |
| | Problems; suggestions; Report | attached | | | |
| | Agency ContactName | | Title | | Di |
| | Name Problems; suggestions; Report | | | Date | Phone no. |
| | | | | | |
| | Agency | | | | |
| | Contact Name Problems; suggestions; Report | | | Date | |
| 4. | Other interviews (optional) | Report attache | d. | | |
| | | 32-40-40-40-40-40-40-40-40-40-40-40-40-40- | | and the second s | |
| | | | | | |
| | | | | | |
| | | CONTROL TOUR ON | AT CONTRDOT C | Amalicable N | N/A |
| | V. ACCESS AND IN | STITUTION | AL CUNTRULS | Applicable 1 | V/ / I |
| A. Fe | | cation shown o | on site map | Gates secured | N/A |
| B. Ot | her Access Restrictions | des godinantes de la contraction de la contracti | | | |
| 1. | Signs and other security measuremarks_ | ures | Location shown of | on site map | N/A |

| C. I | nstitutional Controls (ICs) | | | | |
|------|--|---------------------------------|------------|---------------|------------|
| 1. | Implementation and enfor Site conditions imply ICs no Site conditions imply ICs no | ot properly implemented | Yes Yes | No No | N/A N/A |
| | | elf-reporting, drive by) | | | |
| | Responsible party/agency | | | | |
| | ContactName | Title | Date | - | Phone no. |
| | Name | Titte | Dan | | i none no. |
| | Reporting is up-to-date Reports are verified by the | lead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in de Violations have been report Other problems or suggestion | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy | ICs are adequate ICs are inadeq | - | | N/A |
| D (| General | | | | |
| 1. | Vandalism/trespassing | Location shown on site map No v | andalism (| evident | |
| 2. | Land use changes on site Remarks | N/A | | | |
| 3. | Land use changes off site Remarks | N/A | | | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| A. F | Roads Applicable | N/A | | | |
| 1. | Roads damaged | Location shown on site map Road | ls adequat | e | N/A |

Remarks

| B. Other Site Conditions |
|---|
| Remarks |
| |
| |
| |
| |
| |
| |
| IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| |
| C. Treatment System Applicable N/A |
| Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters |
| Additive (e.g., chelation agent, flocculent)Others |
| Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually |
| Remarks |

| 3. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks Tanks, Vaults, Storage Vessels | | | |
|----|---|--|--|--|
| 3. | N/A Good condition Proper secondary containment Needs Maintenance Remarks | | | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | | | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | | | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks | | | |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

| I. SITE INFORMATION | | | | | |
|--|------------------------------------|--|--|--|--|
| Site name: OGITS Treatment System | Date of inspection: April 29, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS (Check all that apply) | | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |

WELL 37065 37076

| Agency Contact Name Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached 4. Other interviews (optional) Report attached. V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A A. Fencing 1. Fencing damaged Location shown on site map Gates secured N/A Remarks B. Other Access Restrictions 1. Signs and other security measures Location shown on site map N/A Remarks | 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|--|----|--|-------------------|---------------|------------|--|
| Agency | | Agency The Winty | 1000 C 1000 | uluneskla | 724.333.53 | |
| Agency | | Name | Title | Date | Phone no. | |
| Contact Name Title Date Phone no. Agency Contact Name Title Date Phone no. Agency Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Title Date Phone no. Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Problems; suggestions; Report attached Name Title Date Phone no. Problems; suggestions; Report attached Name Access Applicable N/A A. Fencing 1. Fencing damaged Location shown on site map Gates secured N/A B. Other Access Restrictions 1. Signs and other security measures Location shown on site map N/A | | Problems; suggestions; Report attached | ALL OLNO | COMMEN | | |
| Agency | | Agency | _ | | | |
| Contact Name Title Date Phone no. Problems; suggestions; Report attached Agency | | Name Problems; suggestions; Report attached | Title | | 1 | |
| Agency | | Agency | _ | | | |
| Contact Name Problems; suggestions; Report attached 4. Other interviews (optional) Report attached. V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A A. Fencing 1. Fencing damaged Remarks B. Other Access Restrictions Location shown on site map Signs and other security measures Location shown on site map N/A | | | | | | |
| 4. Other interviews (optional) Report attached. V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A A. Fencing 1. Fencing damaged Location shown on site map Gates secured N/A Remarks | | Contact | | Doto | Dhone no | |
| V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A A. Fencing 1. Fencing damaged Location shown on site map Gates secured N/A Remarks B. Other Access Restrictions 1. Signs and other security measures Location shown on site map N/A | | | | | 1 | |
| V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A A. Fencing 1. Fencing damaged Location shown on site map Gates secured N/A Remarks B. Other Access Restrictions 1. Signs and other security measures Location shown on site map N/A | 4. | Other interviews (optional) Report atta | nched. | | | |
| A. Fencing 1. Fencing damaged Location shown on site map Gates secured N/A Remarks B. Other Access Restrictions 1. Signs and other security measures Location shown on site map N/A | | | | | | |
| A. Fencing 1. Fencing damaged Location shown on site map Gates secured N/A Remarks B. Other Access Restrictions 1. Signs and other security measures Location shown on site map N/A | | | | | | |
| A. Fencing 1. Fencing damaged Remarks B. Other Access Restrictions 1. Signs and other security measures Location shown on site map N/A | | V. ACCESS AND INSTITUTI | ONAL CONTROLS | Applicable N/ | A | |
| 1. Fencing damaged Remarks B. Other Access Restrictions 1. Signs and other security measures Location shown on site map N/A | Α. | | | | | |
| 1. Signs and other security measures Location shown on site map N/A | | Fencing damaged Location sho | | Gates secured | N/A | |
| 1. Signs and other security measures 2000000000000000000000000000000000000 | В. | Other Access Restrictions | | | | |
| | 1. | • | Location shown on | site map N/ | Α | |

| - | | | | | |
|----|--|---|-------------------|----------------|-------------------|
| C. | Institutional Controls (ICs) | | | | |
| 1. | Implementation and enformation Site conditions imply ICs notes that Site conditions imply ICs notes that the same statement is sufficient to the same statement and same statement in the same statement is sufficient to the same statement in the same statement is sufficient to the sa | ot properly implemented | Yes Yes | No No | N/A N/A |
| | Frequency | elf-reporting, drive by) | | | |
| | ContactName | Title | Date | - | Phone no. |
| | Reporting is up-to-date Reports are verified by the | lead agency ed or decision documents have been met | Yes Yes Yes | No No No | N/A N/A N/A |
| | Violations have been report Other problems or suggestion | ted | Yes | No | N/A |
| 2. | Adequacy Remarks_ | ICs are adequate ICs are inadeq | uate | | N/A |
| D. | General | | | | |
| 1. | | Location shown on site map No v | andalism 6 | evident | |
| 2. | Land use changes on site Remarks | N/A | | | |
| 3. | Land use changes off site Remarks | N/A | | | |
| | | VI. GENERAL SITE CONDITIONS | | | |
| A. | Roads Applicable | N/A | | | |
| 1. | Roads damaged Remarks | | ls adequat | е | N/A |

| B. Other Site Conditions | | | | |
|--------------------------|--|--|--|--|
| | Remarks | | | |
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| | | | | |
| | | | | |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A | | | |
| A. Gro | undwater Extraction Wells, Pumps, and Pipelines Applicable N/A | | | |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks | | | |
| | | | | |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks | | | |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks | | | |
| | | | | |
| C. Trea | atment System Applicable N/A | | | |
| 1. | Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters | | | |
| | Additive (e.g., chelation agent, flocculent) | | | |
| | Others Good condition Needs Maintenance | | | |
| | Sampling ports properly marked and functional | | | |
| | Sampling/maintenance log displayed and up to date | | | |
| | Equipment properly identified | | | |
| | Quantity of groundwater treated annuallyQuantity of surface water treated annually | | | |
| | Remarks | | | |
| | | | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | |
|----|--|---|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | - |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks | |

| | XI. OVERALL OBSERVATIONS |
|----|--|
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |
| | |

TAB O NORTHERN PATHWAY MODIFICATIONS

| I. SITE INFORMATION | | | |
|--|------------------------------------|--|--|
| Site name: Northern Patherry Sy Stem | Date of inspection: April 27, 2010 | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other Tuspet the original system Add Not inspect the original system | | | |
| Attachments: Inspection team roster attached Site map attached | | | |
| II. INTERVIEWS (| Check all that apply) | | |
| 1. O&M site manager Tony Cachaves / Rick Book Name Interviewed at site at office by phone Phone in Problems, suggestions; Report attached | 10 | | |
| Name Interviewed at site at office by phone Phone r Problems, suggestions; Report attached | Title Date | | |
| = | | | |

| 3. | Local regulatory authorities and response office, police department, office of public headeds, or other city and county offices, etc.) | alth or environmental hea | Tribal offices, eath, zoning offi | mergency response ce, recorder of |
|----|--|---------------------------|-----------------------------------|---------------------------------------|
| | Agency Eurivounufal Prefect & Contact Ron Bertram Name | Title | <u>4/21/10</u> Date | 312 -6061 Phone no. |
| | Problems; suggestions; Report attached | | | |
| | Agency | | | |
| | Contact Name Problems; suggestions; Report attached | | Date | Phone no. |
| | Agency ContactName | | | |
| | Name Problems; suggestions; Report attached | | Date | Phone no. |
| | Agency | | | .1 |
| | Name Problems; suggestions; Report attached | Title | | |
| 4. | | • | | |
| | | | | |
| _ | | | 2 | |
| | V. ACCESS AND INSTITUTION | AL CONTROLS A | pplicable N/ | Α |
| A. | Fencing | | | |
| 1. | Fencing damaged Location shown Remarks | on site map Gate | s secured | N/A2 |
| В. | Other Access Restrictions | | | · · · · · · · · · · · · · · · · · · · |
| 1. | Signs and other security measures Remarks | Location shown on site | map N/ | À) |
| | | | | |

. . .

| 1. | Implementation and enfo Site conditions imply ICs in Site conditions imply ICs in | not properly implemented | Yes Yes | No No | N/A N/A | |
|----|---|----------------------------------|------------|---------------|------------|---|
| | Frequency | self-reporting, drive by) | | | | |
| | Name | Title | Date | - | Phone no. | • |
| | Reporting is up-to-date Reports are verified by the | e lead agency | Yes Yes | No No | N/A N/A | |
| | Specific requirements in de Violations have been report Other problems or suggest: | | Yes Yes | No No | N/A N/A | |
| 2. | Adequacy | ICs are adequate ICs are inadeq | uate | | N/A | |
| | D 1 | | | <u> </u> | | |
| D. | . General | | | | | |
| 1. | Vandalism/trespassing Remarks | | andalism e | vident | <i></i> | |
| 2. | Land use changes on site Remarks | (N/A) | | | | |
| 3. | Land use changes off site Remarks | XIA) | | | | |
| | | | | | | |
| | | VI. GENERAL SITE CONDITIONS | | | | |
| A. | Roads Applicable | N/A | | ·- | | |
| 1. | Roads damaged Remarks | Location shown on site map Roads | s adequate | ر | N/A | |

C. Institutional Controls (ICs)

| B. Other Site Conditions | | | | |
|---|--|--|--|--|
| Remarks | | | | |
| 5 | | | | |
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| | | | | |
| | | | | |
| IX. GROUNDWATER WATER REMEDIES Applicable N/A | | | | |
| A. Groundwater Extraction Wells, Pumps, and Pipelines Applicable N/A | | | | |
| 1. Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating. Needs Maintenance N/A Remarks Estroetion mults were in acceptable conclusion However well 37 821 has evidence a soil subsidence which has resulted in the well Pad elevated 7 2-3 moleculare gran | | | | |
| 2. Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks Inspected the metering boulding and it was in el clear Carcliforn and operating appropriately | | | | |
| 3. Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks | | | | |
| | | | | |
| C. Treatment System Applicable N/A | | | | |
| 1. Treatment Train (Check components that apply) Metals removal Oil/water separation Bioremediation Air stripping Carbon adsorbers Filters Additive (e.g., chelation agent, flocculent) Others Good condition Needs Maintenance Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date | | | | |
| Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually Remarks | | | | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks |
|----|---|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary containment Needs Maintenance Remarks |
| 4. | Discharge Structure and Appurtenances NA Good condition Needs Maintenance Remarks |
| 5. | Treatment Building(s) NA Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sampled Good condition All required wells located Needs Maintenance N/A Remarks Tuskected Ignachent monitoring usells 37469 and 37452. Body wells were in good condition, Pads and |
| | Probection Casing were acceptable and well identification in place. Both wells were locked. |

| | XI. OVERALL OBSERVATIONS |
|----|---|
| Α. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). Puspeation wells at the NP5 which represented the recent modifications do the System. The monitoring wells that went of served ceren in acceptable condition. However well 37821 which extraction well should evidence by soil subsidence leaving the well Pad 2" in the cere, the soil subsidence should be corrected. |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| I. SITE INFORMATION | | | | | |
|--|------------------------|--|--|--|--|
| Site name: Northern Pathway System Date of inspection: April 29, 2010 | | | | | |
| Location and Region: RMA Region VIII EPA ID: C05210020769 | | | | | |
| Agency, office, or company leading the five-year review: RVO | | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS | (Check all that apply) | | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date no | | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |

| 3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | | | |
|--|---|--------------------|-------------------|-----------------------|--|--|
| | Agency COPHE Contact Key Vogler Name Problems; suggestions; Report attached | Engineer | 1/27/10 3 Date | 692-3383 Phone no. | | |
| | Problems; suggestions; Report attached _ | Nothing of a | onem all | ett | | |
| | Agency | | | | | |
| | Contact Name Problems; suggestions; Report attached | | Date | | | |
| | Agency | 7,55,87,55,055,550 | | | | |
| | ContactName Problems; suggestions; Report attached | | Date | | | |
| | Agency Contact Name | | | | | |
| | Name Problems; suggestions; Report attached | Title | Date | | | |
| 4. | Other interviews (optional) Report attack | hed. | | | | |
| | <u>. </u> | | | | | |
| | | | | | | |
| | V. ACCESS AND INSTITUTION | NAL CONTROLS | Applicable N/A | 1 | | |
| A. Fend | cing | | | | | |
| 1. | Fencing damaged Location shown Remarks | n on site map | Gates secured | N/A | | |
| B. Othe | er Access Restrictions | | | | | |
| 1. | Signs and other security measures Remarks | Location shown or | n site map N/A | | | |

| C. Ins | titutional Controls (ICs) | | | | | |
|--------|--|------------------------|-------------|------------|----------|------------|
| 1. | Implementation and enformation Site conditions imply ICs not Site conditions imply ICs not Type of monitoring (e.g., see | | | | | |
| | Frequency | | | | | |
| | Contact | | | | | |
| | Name | Ti | itle | Date | | Phone no. |
| | Reporting is up-to-date Reports are verified by the | ead agency | | Yes Yes | No No | N/A N/A |
| | Specific requirements in device Violations have been report Other problems or suggestion | ed | | Yes Yes | No No | N/A N/A |
| 2. | Adequacy Remarks | ICs are adequate | 1 | | | N/A |
| D. Gei | neral | | | | - 17 | |
| 1. | Vandalism/trespassing Remarks_ | Location shown on site | e map No va | ndalism e | vident | |
| 2. | Land use changes on site Remarks | | | | | |
| 3. | Land use changes off site Remarks | N/A | | | | |
| | | | | | | |

| | | VI. GENERAL SITE CONDI | TIONS | |
|----------|------------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| 1. Roads | s damaged rks | Location shown on site map | Roads adequate | N/A |

| 3. Ot | ther Site Conditions |
|-------|---|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| . Gr | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| | |
| Tr | reatment System Applicable N/A |
| | Treatment Train (Check components that apply) |
| | Metals removal Oil/water separation Bioremediation |
| | Air stripping Carbon adsorbers |
| | Filters |
| | Additive (e.g., chelation agent, flocculent) |
| | Others · · · · · · · · · · · · · · · · · · · |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional |
| | Sampling/maintenance log displayed and up to date |
| | Equipment properly identified Overhity of groundwater treated annually |
| | Quantity of groundwater treated annually Quantity of surface water treated annually |
| | Remarks |
| | iveniai kā |
| | |

| 2. | Electrical Enclosures and Panels (properly rated and functional) | | | | | |
|----|--|---|----------------|--|--|--|
| | N/A | Good condition Needs Maintenance | | | | |
| | Remarks | | | | | |
| 3. | Tanks, Vault | s, Storage Vessels | | | | |
| | | Good condition Proper secondary containment | | | | |
| | Remarks | | | | | |
| 4. | Discharge Sti | ructure and Appurtenances | | | | |
| | | Good condition Needs Maintenance | | | | |
| | Remarks | | | | | |
| 5. | Treatment B | uilding(s) | | | | |
| | N/A | Good condition (esp. roof and doorways) | Needs repair | | | |
| | Chemicals a | and equipment properly stored | | | | |
| | Remarks | | | | | |
| 6. | Monitoring V | Wells (pump and treatment remedy) | | | | |
| | | cured/locked Functioning Routinely sampled | Good condition | | | |
| | | l wells located Needs Maintenance | N/A | | | |
| | Remarks | | | | | |
| | | | | | | |

| | XI. OVERALL OBSERVATIONS | | | | |
|----|--|--|--|--|--|
| A. | Implementation of the Remedy | | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | | |
| | | | | | |
| | | | | | |
| В. | Adequacy of O&M | | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | | |
| | | | | | |

| I. SITE INF | ORMATION | | | | |
|--|------------------------------|--|--|--|--|
| Site name: Northern Pathway System Date of inspection: April 29, 2010 | | | | | |
| Location and Region: RMA Region VIII | EPA ID : C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation X Access controls Groundwater containment Institutional controls Vertical barrier walls X Groundwater pump and treatment Surface water collection and treatment Other | | | | | |
| Attachments: Inspection team roster attached | Site map attached | | | | |
| II. INTERVIEWS | (Check all that apply) | | | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |

| 3. Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | | | | | |
|--|--|--|--|--|--|--|--|--|
| Agency Thi-warry Contact Wardy Warrena Z Roma Fig. 0 Substition 710. 3 Name Title Date Phone no. | | | | | | | | |
| Problems; suggestions; Report attached HLLOUND WMM 5/5/10 | | | | | | | | |
| Agency Contact | | | | | | | | |
| Name Title Date Phone no. Problems; suggestions; Report attached | | | | | | | | |
| Agency Contact | | | | | | | | |
| Name Title Date Phone no. Problems; suggestions; Report attached | | | | | | | | |
| Agency Contact | | | | | | | | |
| Name Title Date Phone no. Problems; suggestions; Report attached | | | | | | | | |
| Other interviews (optional) Report attached. | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A | | | | | | | | |
| | | | | | | | | |
| Remarks | | | | | | | | |
| Other Access Restrictions | | | | | | | | |
| Signs and other security measures Location shown on site map N/A Remarks | | | | | | | | |
| | office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. Agency Tli-Ward Name Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Agency Contact Name Title Date Phone no. Problems; suggestions; Report attached Other interviews (optional) Report attached V. ACCESS AND INSTITUTIONAL CONTROLS Applicable N/A Fencing Fencing damaged Location shown on site map Gates secured N/A Remarks Other Access Restrictions Signs and other security measures Location shown on site map N/A | | | | | | | |

| C.] | Institutional Controls (ICs) | | - " | | | | |
|-------------|---|--|-------------------|------------|----------|------------|---|
| 1. | Site conditions imply ICs no | Implementation and enforcement Site conditions imply ICs not properly implemented Site conditions imply ICs not being fully enforced Yes | | | No No | N/A N/A | |
| | Type of monitoring (e.g., see Frequency | elf-reporting, drive by) | | | | | |
| | Responsible party/agency | | | | | | - |
| | ContactName | | Title | - D. (| | Diamag | - |
| | Name | | litle | Date | 2 | Phone no. | |
| | Reporting is up-to-date | | | Yes | No | N/A | |
| | Reports are verified by the | lead agency | | Yes | No | N/A | |
| | | | | | | *** | |
| | Specific requirements in de | | nts have been met | Yes | No | N/A N/A | |
| | Violations have been report Other problems or suggestion | | shad | Yes | No | N/A | |
| 2. | Adequacy Remarks | ICs are adequate | _ | | | N/A | |
| D. (| General | | | | 167 | | |
| 1. | Vandalism/trespassing Remarks | | | andalism e | vident | | |
| 2. | Land use changes on site Remarks | N/A | | | | | |
| 3. | Land use changes off site Remarks | | | | | | |
| | | | | | | | |

| VI. GENERAL SITE CONDITIONS | | | | |
|-----------------------------|------------------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| | oads damaged emarks | Location shown on site map | Roads adequate | N/A |

| В. О | ther Site Conditions |
|-------------|---|
| | Remarks |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | IX. GROUNDWATER WATER REMEDIES Applicable N/A |
| A. G | roundwater Extraction Wells, Pumps, and Pipelines Applicable N/A |
| 1. | Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating Needs Maintenance N/A Remarks |
| 2. | Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance Remarks |
| 3. | Spare Parts and Equipment Readily available Good condition Requires upgrade Needs to be provided Remarks |
| C. T | reatment System Applicable N/A |
| 1. | Treatment Train (Check components that apply) |
| 1. | Metals removal Oil/water separation Bioremediation |
| | Air stripping Carbon adsorbers |
| | Filters |
| | Additive (e.g., chelation agent, flocculent) |
| | Others |
| | Good condition Needs Maintenance |
| | Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date |
| | Equipment properly identified |
| | |
| | Quantity of groundwater treated annually |
| | Quantity of groundwater treated annually Quantity of surface water treated annually |

| 2. | Electrical Enclosures and Panels (properly rated and functional) N/A Good condition Needs Maintenance Remarks | | | | | |
|----|--|--------------|--|--|--|--|
| 3. | Tanks, Vaults, Storage Vessels N/A Good condition Proper secondary contains Remarks | | | | | |
| 4. | Discharge Structure and Appurtenances N/A Good condition Needs Maintenance Remarks | | | | | |
| 5. | Treatment Building(s) N/A Good condition (esp. roof and doorways) Chemicals and equipment properly stored Remarks | Needs repair | | | | |
| 6. | Monitoring Wells (pump and treatment remedy) Properly secured/locked Functioning Routinely sample All required wells located Needs Maintenance Remarks | N/A | | | | |

| XI. OVERALL OBSERVATIONS | | | | |
|--------------------------|--|--|--|--|
| A. | Implementation of the Remedy | | | |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). | | | |
| | | | | |
| | | | | |
| В. | Adequacy of O&M | | | |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. | | | |
| | | | | |

TAB P SANITARY SEWER MARKERS

| I. SITE INFORMATION | | | | | |
|---|--|--|--|--|--|
| Site name: Sanitary Sewer Plugging | Date of inspection: April 28, 2010 | | | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: Mostly Sunny, windfrom the wap to 2d mph. | | | | |
| Access controls Institutional controls Groundwater pump and treatment Surface water collection and treatment | Monitored natural attenuation Groundwater containment Vertical barrier walls narkers and signs indicating location of the sanitary | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS | (Check all that apply) | | | | |
| 1. O&M site manager R. Boards W Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | no. | | | | |
| Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | Title Date | | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | | |
|------|--|-------------------------------|---------------------------------|----------------------------|--|
| | Agency EPA Contact Fon Bertsam Name | | 4-28-10 | (303)31≥ 606(Phone no. | |
| | Name Problems; suggestions; Report attached | Title | Date | | |
| | Agency | | | | |
| | Contact Name Problems; suggestions; Report attached | | Date | Phone no. | |
| | Agency | | | | |
| | Name Problems; suggestions; Report attached | Title | Date | Phone no. | |
| | Agency | | | | |
| | Name Problems; suggestions; Report attached | | Date | Phone no. | |
| 4. | Other interviews (optional) Report attache | d. | | | |
| | | | | | |
| | | | | | |
| | Eug in earth | <i>y</i> | | | |
| | V. ACCESS AND INSTITUTION | | (Applicable) N/A | 4 | |
| A. F | encing | | | | |
| 1. | Fencing damaged Location shown of Remarks_ | on site map | Gates secured | N/A | |
| B. C | Other Access Restrictions | | | | |
| 1. | Signs and other security measures Remarks Some Markers were Not M | Location shown or Place For M | a site map N/A e Sauitary Se | wes manholds | |

| Yes Yes | No No | N/A N/A | | | |
|--|----------------------------------|--|--|--|--|
| Site conditions imply ICs not being fully enforced Yes No N/A Type of monitoring (e.g., self-reporting, drive by) Frequency | | | | | |
| | | 10 TO 1 | | | |
| Date | - | Phone no. | | | |
| Yes Yes | No No | N/A N/A | | | |
| Yes Yes | No No | N/A N/A | | | |
| | | | | | |
| - | | N/A | | | |
| | | | | | |
| andalism e | vident | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | Date Yes Yes Yes Yes Yes Yes Yes | Tote Yes No Yes No Yes No Yes No Yes No | | | |

| VI. GENERAL SITE CONDITIONS | | | | | |
|-----------------------------|---------------|----------------------------|----------------|-----|--|
| A. Roads Applicable N/A | | | | | |
| 1. Roads Remar | damaged ks | Location shown on site map | Roads adequate | N/A | |

| B. Otl | ner Site Conditions |
|--------|---|
| | Remarks 3 Inspections were made of plugged sanitary sewer manholes; markers and signs indicating location of the sanitary sewer line. The RVO Land, USE control Monotoring refort was used as a guide for conducting inspections. |
| | XI. OVERALL OBSERVATIONS |
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). The purpose of the inspections was to assess the Marker's for plugged sewers. The following are observations. Marker's were missing from 26,28,46,48,50 and 9 (within sect 26), as well as 392-1 and 393-4 as reported by RVD. Exposed pipewas still exposed Narth of 49, as reported by RVD. 29,35 and 79 were verified to be, buried by New access roads. Due to lack of GPS, 67A-67D and 58-60 were not located. In addition, Marker's were missing from 25,27,43,44,45,46,47,48 and 50. Also, #9 had a broken marker that won't stay upright |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |

| FORMATION | | | | | |
|--|--|--|--|--|--|
| Date of inspection: April 28, 2010 | | | | | |
| EPA ID: C05210020769 | | | | | |
| Weather/temperature: | | | | | |
| Remedy Includes: (Check all that apply) Landfill cover/containment Monitored natural attenuation Access controls Groundwater containment Institutional controls Vertical barrier walls Groundwater pump and treatment Surface water collection and treatment X OtherPlugged sanitary sewer manholes; markers and signs indicating location of the sanitary sewer line | | | | | |
| Attachments: Inspection team roster attached Site map attached | | | | | |
| II. INTERVIEWS (Check all that apply) | | | | | |
| Title Date | | | | | |
| Title Date | | | | | |
| | | | | | |

| 3. | Local regulatory authorities and response agencies (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply. | | | |
|--------|--|----------------------------|-------------------|---------------------------|
| | Agency COPHE Contact Ken Vagler Name Problems; suggestions; Report attached Caps in Buan Pilot Area (B) | Spot imperted SPA) Att Off | Date file Saniter | 303 (92-3393 Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| | Agency | Title | Date | Phone no. |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | Phone no. |
| 4. | Other interviews (optional) Report attack | ched. | | |
| | | | | |
| | V. ACCESS AND INSTITUTION | ONAL CONTROLS | Applicable N | //A |
| A. Fen | cing | | | |
| 1. | Fencing damaged Location show Remarks | | Gates secured | N/A |
| B. Oth | ner Access Restrictions | | | |
| 1. | Signs and other security measures Remarks | Location shown on | ı site map N | //A |

| | nstitutional Controls (ICs) | | | | |
|------|--|---------------------------------|------------|----------|------------|
| 1. | Implementation and enfor Site conditions imply ICs no Site conditions imply ICs no | ot properly implemented | Yes Yes | No No | N/A N/A |
| | Frequency | elf-reporting, drive by) | | | |
| | Responsible party/agency _ | | | | |
| | Contact Name | Title | Date | e | Phone no. |
| | Reporting is up-to-date Reports are verified by the | ead agency | Yes Yes | No No | N/A N/A |
| | Specific requirements in de Violations have been report Other problems or suggestion | | Yes Yes | No No | N/A N/A |
| | | | | | |
| 2. | Adequacy Remarks | ICs are adequate ICs are inadec | | | N/A |
| | | | | | N/A |
| | Remarks General Vandalism/trespassing | | andalism e | | N/A |
| D. G | Remarks General Vandalism/trespassing Remarks Land use changes on site | Location shown on site map No v | andalism e | evident | |

| VI. GENERAL SITE CONDITIONS | | | | |
|-----------------------------|------------------|----------------------------|----------------|-----|
| A. Roads | Applicable | N/A | | |
| 1. Road Rema | s damaged rks | Location shown on site map | Roads adequate | N/A |

| B. O | ther Site Conditions |
|------|--|
| | Remarks Inspections were made of plugged sanitary sewer manholes; markers and signs indicating location of the sanitary sewer line. |
| | |
| | |
| | |
| Α. | XI. OVERALL OBSERVATIONS Implementation of the Remedy |
| A. | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). |
| | |
| | |
| | |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. |
| | |
| | |
| | |

Trilounty Health

OSWER No. 9355.7-03B-P

Five-Year Review Site Inspection Checklist

| I. SITE INFO | DRMATION | | |
|--|---|--|--|
| Site name: Sanitary Sewer Plugging | Date of inspection: April 28, 2010 | | |
| Location and Region: RMA Region VIII | EPA ID: C05210020769 | | |
| Agency, office, or company leading the five-year review: RVO | Weather/temperature: Windy - 75°F, Somph steady, clear-P county | | |
| Access controls G Institutional controls V Groundwater pump and treatment Surface water collection and treatment | fonitored natural attenuation for a containment | | |
| Attachments: Inspection team roster attached | Site map attached | | |
| II. INTERVIEWS (| Check all that apply) | | |
| 1. O&M site manager Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | | | |
| 2. O&M staff Name Interviewed at site at office by phone Phone Problems, suggestions; Report attached | | | |

| 3. | Local regulatory authorities and response office, police department, office of public he deeds, or other city and county offices, etc.) | ealth or environmental health | ibal offices, en a, zoning office | mergency response ce, recorder of |
|--------|---|-------------------------------|--------------------------------------|--------------------------------------|
| | Agency TCHO Contact Magfelle Name Problems; suggestions; Report attached | ENV. Secialist N/4. | 4/28/10 Date | 720 302-1522 Phone no. |
| | Agency Name | | Date | Phone no. |
| | Problems; suggestions; Report attached | | | |
| | Agency Contact Name Problems; suggestions; Report attached | Title | Date | |
| | Agency | Title | Date | Phone no. |
| 4. | Other interviews (optional) Report attack | hed. | | |
| | | | | |
| | | | | |
| | V. ACCESS AND INSTITUTIO | ONAL CONTROLS App | plicable (V | To Car |
| A. Fen | | | | |
| 1. | Fencing damaged Location shows Remarks | n on site map Gates s | secured | Ø/A |
| B. Oth | ner Access Restrictions | | | |
| 1. | Signs and other security measures Remarks All Signage ANE CLUAN | Location shown on site n | nap N/ | 'A |

** ***

| C. I | nstitutional Controls (ICs) | | | | |
|------|---|---|------------------|----------|--------------|
| 1. | Implementation and en Site conditions imply ICs Site conditions imply ICs | not properly implemented | Yes Yes | No No | NA MA |
| | Frequency | self-reporting, drive by) | | | |
| | Contact | | | | |
| | Name | Title | Date | | Phone no. |
| | Reporting is up-to-date Reports are verified by the | e lead agency | Yes Yes | No No | N/A |
| | Specific requirements in Violations have been repo | | n met Yes Yes | No No | |
| | | | | | |
| 2. | Adequacy Remarks | ICs are adequate ICs are | inadequate | | N/A) |
| D. G | eneral | | | | |
| 1. | Vandalism/trespassing Remarks <i>(liewed</i>) | Location shown on site map (5 MANNfoces, Concrete, sq | No vandalism e | vident | tact on All. |
| 2. | Land use changes on sit Remarks | | | | |
| 3. | Land use changes off sit Remarks | e (N/A) | | | |
| | | VI. GENERAL SITE CONDITION | ONS | | |
| A. R | oads Applicable | (N/A) | O119 | | |
| 1. | Roads damaged Remarks | Location shown on site map | Roads adequate | | N/A |

| B. O | ther Site Conditions |
|---------------------------------------|--|
| | Remarks Inspections were made of plugged sanitary sewer manholes; markers and signs indicating location of the sanitary sewer line |
| | |
| · · · · · · · · · · · · · · · · · · · | XI. OVERALL OBSERVATIONS |
| A. | Implementation of the Remedy |
| | Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.). Plugged to Rasterch Access. Concrete plug function in as designed. |
| В. | Adequacy of O&M |
| | Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. O&W appear aeleguate. |
| | |
| | |

- · 03001 R. yard note how labeled.
- · Br ridge buried well 36566
- · LB Dw10 well # 36320
- · 24/05 Smashed photo
- · 04029 ~ V
- · 02522-1