Class II UIC Permit Application Review

PERMIT INFORMATION

Permit Number:

Well Name: Howie 1 SWD

Operator: SLAWSON EXPLORATION CO., INC.

Date Application Received: 02/01/2018

CHECKLIST

☒	Completed Permit Application Form 7520-6	All Wells
☐	Signature of an authorized representative	All Wells
☒	Notification of Landowners	All Wells **except ND, WY, UT**
☒	(A) Area of Review Methods	Required
☒	(B) Topographic Map of Wells – AOR	Required
☒	(C) Corrective Action Plan – Well Data	Required
☒	(E) Name and Depth of USDWs	Required
☒	(G) Geology of Injection and Confining Zones	
☒	(H) Operating Data	
☒	(I) Formation Testing Plan	
☒	(J) Stimulation Plan	
☒	(K) Injection Procedures	
☒	(L) Construction Procedures	
☒	(M) Construction Details (Schematic)	
☒	(O) Plan for Well Failure	
☐	(P) Monitoring Program	
☒	(Q) Plugging and Abandonment Plan (7520-14)	
☒	(R) Description of Financial Responsibility:	
☒	(S) Aquifer Exemption	As Necessary
☒	(T) Existing EPA Permits	
☒	(U) Description of Business	

Permit Reviewed By: Carolyn Cline

Application Status: COMPLETE

Land Status Verification Initiated:

SLAWSON
exploration company, inc.

RECEIVED FEB 0 1 2018

January 29, 2018

US Environmental Protection Agency
Underground Injection Control, Region 8
1595 Wynkoop Street
Denver, Colorado 80202

Mr. Douglas Minter

Howie 1 SWD
Underground Injection Control Permit Request
Sec 21-T151N-R92W
Mountrail County, North Dakota

Dear Mr. Minter,

Enclosed please find the Underground Injection Control permit request for the Howie 1 SWD well located in Mountrail County, North Dakota. This submitted permit includes an aquifer exemption request.

Thank you for your attention in this matter. If you have any questions, please contact me using the information provided below.

Sincerely,

Eric Sundberg, V.P. Environmental and Regulatory Affairs
Slawson Exploration Company, Inc.

esundberg@slawsoncompanies.com
Office (720) 420-6975
Mobile (303) 396-2494

Rocky Mountain Division

1675 Broadway, Suite 1600
Denver, Colorado 80202
(303) 592-8880 - FAX (303) 592-8881

SLAWSON
exploration company, inc.

HOWIE 1 SWD
Sec 21-T151N-R92W
Mountrail County, ND

EPA Form 7520-6
List of Attachments

A: Area of Review Methods.

Slawson Exploration Company, Inc (Slawson) proposes the use of the fixed radius ¼ mile area of review (AOR) method.

B: Map of Well/Area and Area of Review.

A topographic map with ¼ mile radius AOR is submitted for review (**Attachment B-1**). A list of landowners within the ¼ mile radius AOR is submitted for review (**Attachment B-2**). There are no producing oil wells within the AOR. There are no injection wells, abandoned wells, dry holes, mines, quarries, known faults, springs, water wells, aquifers or surface bodies of water within the AOR. There is one road within the AOR.

There is one residence house within the AOR. It is approximately 1,250 feet from the proposed SWD well, with access from 88th Ave. NW. The address of the residence house is 3235 88th Ave. NW, New Town, ND 58763.

The road within the AOR is 88th Ave. NW, which runs north-south directly west of the proposed SWD. The road will be used for the drilling, completion and operation of the proposed SWD.

C: Corrective Action Plan and Well Data.

There are no oil wells within the AOR.

It is not anticipated that the proposed Howie 1 SWD well will exceed the fracture pressure of the injection formation as there will be electrical/mechanical safety shut down devices installed on the pressure side of the injection pump to enact at or below the approved maximum injection pressure (MAIP).

D: Maps and Cross Section of USDWs.

This is not applicable to Class II wells.

E: Name and Depth of USDWs (Class II).

All surface water strata, down to and including the base of the Fox Hills formation (+/- 1656') are at risk to injection. Below lists the names of USDW strata and TDS information:

Name	Depth*1	TDS mg/L *2
Coleharbor Formation	0'	
Fort Union Group	23'	2,110
Hell Creek Formation	1,141'	1,530
Fox Hills Formation	1,511'	1,530
Base of Fox Hills/T Pierre	1,754'	1,530

*1 Source: Clayton, Lee, 1972. "Geology of Mountrail County, North Dakota", North Dakota Geological Survey Bulletin 55-IV.

Bluemle, John P., Sidney B. Anderson, John A. Andrew, David W. Fischer and Julie A. LeFever, 1986. "North Dakota Stratigraphic Column", North Dakota ?Geological Survey Miscellaneous Series 66.

*2 Source: USGS Water Resources of North Dakota/Water Resources of the Fort Berthold Indian Reservation, West Central North Dakota, Report 98-4098

The use of two strings of casing, two cement jobs designed to surface, and tubing will minimize the risk of contamination to USDW's. The tubing annulus will be monitored daily for pressure, and if detected, the SWD will be shut down immediately and necessary repairs made.

F: Maps and Cross Sections of Geologic Structure.
This is not applicable to Class II wells.

G: Geological Data on Injection and Confining zones.

See **Attachment G.**

In the proposed well location, the Inyan Kara Formation (injection zone) is immediately confined by the overlying Mowry and Skull Creek Shales (approximately 350' thick) and the underlying Swift Shale (approximately 430' thick). The Inyan Kara is estimated to be 400' thick in this same area.

The upper confining Mowry and Skull Creek Formations are Cretaceous and described as: Shale, medium to dark gray, soft, flakey to splintery, spongy; traces of light-blue-gray bentonitic clay with no effective porosity or permeability; top is marked by radioactive zone. In the southern Mountrail

County area, the sandy Newcastle Formation ("Muddy") is absent, and the Mowry is instead underlain by the Skull Creek: shale, medium to dark gray, micaceous, soft, flaky to lumpy.

Note: In addition to the adjacent Mowry and Skull Creek Formations, the 'upper confining interval' will essentially consist of all the shale units between the Inyan Kara and the deepest surface water stratum, the base of Fox Hills (approximately 3,150' of shale in total).

The lower confining Swift Formation is Jurassic and is described as: Shale, dark gray to greenish, fissile to splintery, dull to sub waxy texture, calcareous; local limestone and glauconitic sandstone.

The Inyan Kara is Cretaceous and is described as: Mainly marine sandstone (upper part), light-gray, fine to coarse, quartzose; and shale, gray, silty, and lumpy. Lower part is mainly nonmarine sandstone; medium to coarse, angular to subrounded, quartzose, occasional lenses of gray, bentonitic shale commonly contains manganese-siderite spherulites (pellets).

Only sand intervals with adequate porosity will be perforated and utilized for injection. It is anticipated that there will be over 120 feet of porous zone available for perforations and injection.

Using the North Dakota Industrial Commission (NDIC) frac gradient of .8 PSI/FT, equates to 1375 PSIG MAIP.

H: Operating Data.

1. Average rate: 15000 BPD, Maximum rate: 20,000 BPD
2. Average pressure 900-1200 PSIG estimated. Maximum pressure 1375 PSIG
3. The nature of annulus fluid will be fresh water treated with an inhibitor.
4. Not applicable for Class II wells.
5. The source of injected fluids will include: produced formation water from nearby Bakker and Three Forks oil wells. See attached water analysis for the Diamondback 3-21H produced water – TDS 181,000 (**Attachment H-1**), Water Moccasin 4-34TFH produced water – TDS 198,000 (**Attachment H-2**), Jericho 2-5TFH produced water – TDS 253,000 (**Attachment H-3**) It is assumed that the waters are characteristic of the nearby wells produced water, frac recovery water, and drill site water.
6. Not applicable to Class II wells.

I: Formation Testing Program

Slawson will perform a Step Rate Test to ensure that injection pressure does not exceed the fracture pressure of the well. Slawson also reserves the privilege to conduct other reasonable tests as necessary.

J: Stimulation Program

Slawson reserves the privilege to stimulate the Inyan Kara interval with hydrochloric (HCl) acid, fracture treatment, or both types of stimulation methods should injection rates be deemed unsatisfactory.

K: Injection Procedures

Slawson proposes utilizing a pump house complete with a closed system charge pump, filter system, injection pump, six-four (400) BBL storage tanks, two-four (400) BBL oil storage tanks, and two-seven hundred and fifty (750) BBL injection water tanks. Pressure sensors will monitor injection pressure and shut the pump off at or below the maximum allowed injection pressure (MAIP). Water for injection will be pipelined and trucked to the storage tanks located at the SWD site.

It is anticipated that very little, if any water will be trucked to the site for disposal. Meters at the transfer pump and at the injection site will be used to monitor the amount of fluid injected, and any trucked water to the site will be accounted by brine run tickets.

L: Construction Procedures

It is proposed to drill and complete the Howie 1 SWD well as follows: Build location and use pit-less system for drill cuttings. The drill cuttings will be moved to an approved third-party disposal at conclusion of drilling.

Drill 13 1/2" hole to 120'+ below the Fox Hills to 1,863'+. Run drift surveys every 300'. Make wiper trip to base of conductor.

Rig up and run new 9 5/8" 36# J-55 STC casing to 1,863'+. Cement casing in place with: Lead-380 sacks Class C Cement (11.5 PPG, Yield 2.05 ft3/sack,
18.19 gallons/sack mix). Tail-205 sacks Class G cement (13.0 PPG, Yield 1.15 ft3/sack, 11.06 gallons/sack mix). Use 60% excess and circulate cement to surface. Centralize surface casing with one per joint to within 100 feet of surface.

The VariCem for the surface casing is Type III cement with the following additives: Salt, Cal-Seal, Econolite, Versaset, Poly-flake. (Note: Slawson reserves the privilege to change the cement design).

NU BOPE and test.

Drill 8 3/4"hole to projected TD of 5460'. Run drift surveys every 300'. Do not let the wellbore drift past 1.0 degrees. Drill this section with a 1.5-degree motor and a mwd in the BHA. After reaching td, make a wipe trip to the base of surface casing. Prepare wellbore for logging.

Log as follows: triple combo log suite, Gamma Ray, Induction and Neutron-density logs. After logging, trip in hole to condition well for running casing.

Run new 7"23# N80 casing to TD. Cement in place with the following, Lead: 405 sacks Elasticem Type 3 (12.2 PPG, Yield 2.05 ft3/sack, 10.95 gallons/sack mix) and Tail: 205 sacks Elasticem Type 1 (14 PPG, Yield 1.15 ft3/sack, 7.17 gallons/sack mix). Cement volume calculated from caliper log plus 20% excess to surface.

The 12.2 lb/gal ElastiCem for the production casing is 25/75 poz/Type III with the following addtives: WellLife 708, SA-1015, HR-601. The 14.0 lb/al ElastiCem for the production casing is Class G cement with the following additives: WellLife 708, bentonite, HR-601. (Note: Slawson reserves the privilege to change the cement design). Centralize with one per joint into the surface pipe with spiraled positive standoff equipment. Place 10 more evenly placed through the surface pipe section.

Rig down and move out drilling rig. Prep wellsite for workover rig.
Run CBL/CCL/GR log to 100' above top of cement. Squeeze as needed.
Perforate Inyan Kara porosity intervals as determined from open hole logs, at approximately (4845'-5261' gross interval).
Run 3.5" 9.3# J55 EUE tubing, with nickel coated on-off tool and 7" 23# nickel coated retrievable type packer with staging nipple below. Circulate fresh water inhibited packer fluid to annulus. Set packer at approximately 4865'+ and nipple up well head. Run MIT to 1000 PSIG for 15 minutes & notify NDIC for witnessing.

Clean up location, and build surface facilities. Place on injection.
No cores or drill stem tests are planned. Open and cased hole logs will be provided at the completion of the well.

M: Construction Details

Attached are the surface (production layout) and subsurface construction details (well bore diagram) for the Howie 1 SWD well (**Attachments M-1 & M-2,** respectively).

N: Changes in Injected Fluid

Not applicable to Class II wells

O: Plans for Well Failures

Potential failures have been considered and mitigated by the design of the SWD well. These considerations include the 9 5/8" surface casing set 125'+ below USDW, cemented to surface and cement inside the 7" x 9 5/8" annulus protecting the base of the surface shoe. The pump facility and tubing annulus will be monitored daily for pressure build up and the well shut-in immediately if such should occur. Should pressure be observed in the annulus, the tubing and packer will be remediated as necessary, and the well returned to service. Surface facilities will include pressure safety switches that will shut down the pump in the event of high pressure or low suction. If need be, produced water from oil wells would be re-routed to other facilities until the SWD well was returned to service.

P: Monitoring Program

Optional for Class II wells

Q: Plugging and Abandonment

See Form 7520-14 Plugging and Abandonment Plan (**Attachment Q-1**), P&A well bore diagram (**Attachment Q-2**), and proposed P&A Procedure (**Attachment Q-3**).

R: Necessary Resources

Slawson Exploration Company, Inc. has a Standby Trust Agreement in place for $150,000. This mechanism has been updated to reflect the addition of the Big Bend 3-6 well (**Attachment R**).

S: Aquifer Exemptions

Application for Aquifer Exemption permit request attached separately.

T: Existing EPA Permits

Big Bend 1-5 SWD, S5 T151 R92W (UIC Permit No: ND 22184-08837)

U: Description of Business

Slawson Exploration Company, Inc. is an independent energy company engaged in the exploration, exploitation, development, acquisition, and production of natural gas and crude oil.

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OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency

Underground Injection Control Permit Application

(Collected under the authority of the Safe Drinking Water Act. Sections 1421, 1422, 40 CFR 144)

I. EPA ID Number			
		T/A	C
U			

Read Attached Instructions Before Starting

For Official Use Only

Application approved mo day year	Date received mo day year	Permit Number	Well ID	FINDS Number

II. Owner Name and Address

Owner Name	Street Address	Phone Number	City	State	ZIP CODE
Slawson Exploration Co., Inc.	1675 Broadway, Suite 1600	(303) 592-8880	Denver	CO	80202

III. Operator Name and Address

Owner Name	Street Address	Phone Number	City	State	ZIP CODE
Slawson Exploration Co., Inc.	1675 Broadway, Suite 1600	(303) 592-8880	Denver	CO	80202

IV. Commercial Facility

- [x] Yes
- [ ] No

V. Ownership

- [x] Private
- [ ] Federal
- [ ] Other

VI. Legal Contact

- [x] Owner
- [ ] Operator

VII. SIC Codes

1311, 1381, 1382, 1389

VIII. Well Status *(Mark "x")*

- [ ] A. Operating — Date Started mo day year:
- [ ] B. Modification/Conversion
- [x] C. Proposed

IX. Type of Permit Requested *(Mark "x" and specify if required)*

- [x] A. Individual
- [ ] B. Area

Number of Existing Wells	Number of Proposed Wells	Name(s) of field(s) or project(s)
0	1	Big Bend Field

X. Class and Type of Well *(see reverse)*

A. Class(es) (enter code(s))	B. Type(s) (enter code(s))	C. If class is "other" or type is code 'x,' explain	D. Number of wells per type (if area permit)
II	D		

XI. Location of Well(s) or Approximate Center of Field or Project

Latitude Deg	Min	Sec	Longitude Deg	Min	Sec	Township and Range Sec	Twp	Range	1/4 Sec	Feet From	Line	Feet From	Line
47	53	0.0	102	28	08.7	21	151	92	SW	2465	S	650	W

XII. Indian Lands (Mark "x")

- [x] Yes
- [ ] No

XIII. Attachments

(Complete the following questions on a separate sheet(s) and number accordingly; see instructions)

For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A--U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application.

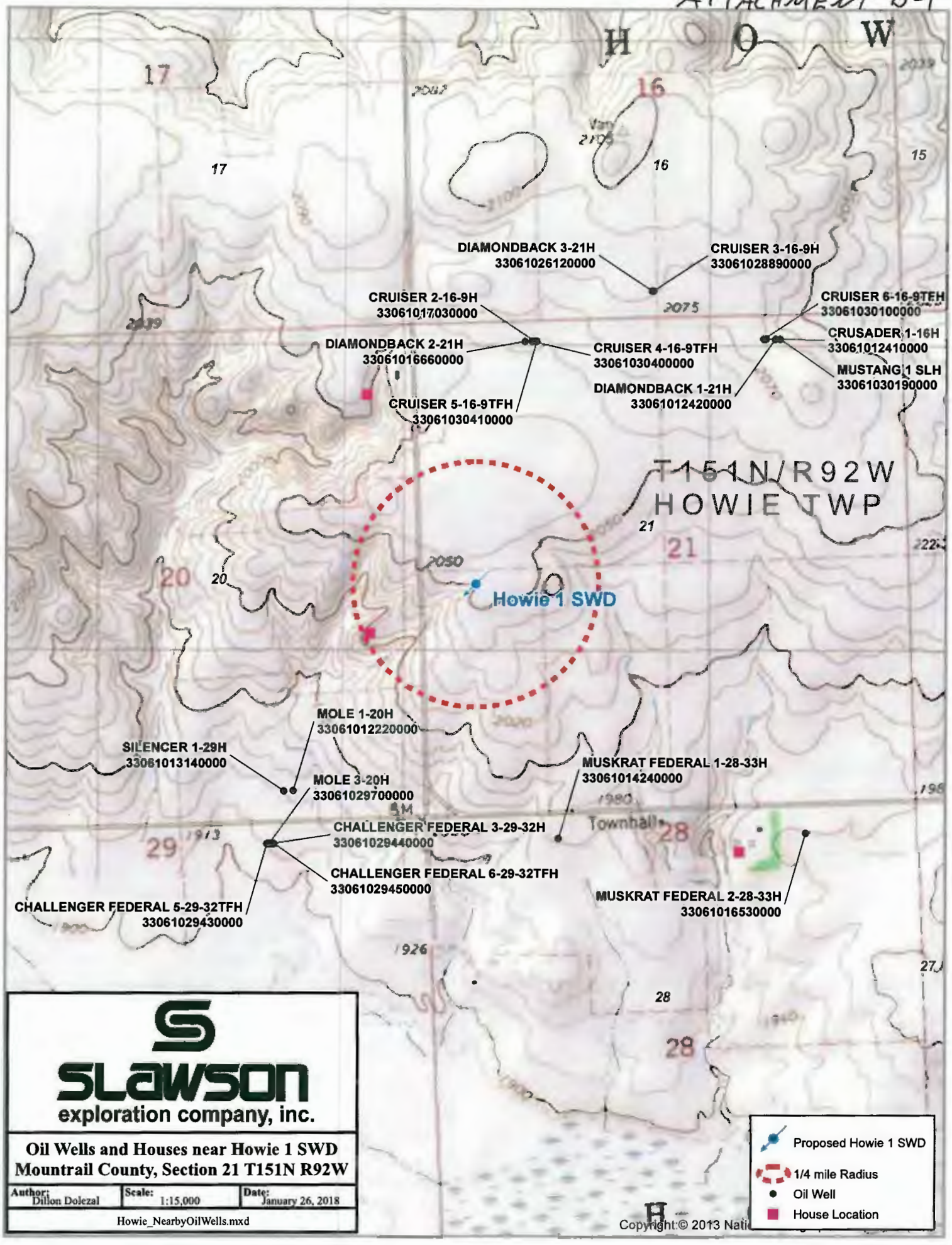
XIV. Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

A. Name and Title *(Type or Print)*	B. Phone No. *(Area Code and No.)*
Eric Sundberg, V.P. Environmental and Regulatory Affairs	(720) 420-6975
C. Signature	**D. Date Signed**
	1/29/2018

EPA Form 7520-6 (Rev. 12-08)

ATTACHMENT B-1



SLAWSON
exploration company, inc.

Oil Wells and Houses near Howie 1 SWD
Mountrail County, Section 21 T151N R92W

Author:	Scale:	Date:
Dillon Dolezal	1:15,000	January 26, 2018

Howie_NearbyOilWells.mxd

Attachment B-2

Land Owners Within ¼ Mile (AOR)

Of

2465' FSL, 650' FWL

NWSW Section 21, T151N, R92W

T151N-R92W Sec 21 SW
Mark & Cheryl Lee
301 Main St N
New Town, ND 58763
701 898-4444

T151N-R92W Sec 21 NW
Dale & Nina Uran
231 3rd St N
New Town, ND 58763
701 862-3268 (Dale & Nina's)
Their son Daryl is who I have spoken to (701 421-5894) about the road concerns

T151N-R92W Sec 20 NESE
Gary T & Sheri D Danks
PO Box 1145
New Town, ND 58763
701 627-3787

T151N-R92W Sec 20 NE
Sheri Danks
3235 88th Ave NW
New Town, ND 58763
701 627-3787

ATTACHMENT G

Expected depths, thicknesses and general lithology of units to be encountered in Howie 1 SWD.

Note: tops and thicknesses from surface through base of Foxhills/top Pierre inferred from surface exposures and shallow boreholes. Top of Pierre, and tops and thicknesses of units below this point, are projected from deep well-log control. True vertical depth values are calculated from a datum elevation of 2,047' above sea level.

True Vertical Depth (thickness)

0 (23) Coleharbor, Pleistocene: unconsolidated sediments, genetically related to glacial processes and a northerly clastic sediment source area. Three general categories: pebbly, sandy, silty clay (87%); sand and gravel (8%); and silt and clay (5%). The "pebbly, sandy, silty clay" unit is inferred to be glacial till, has low permeability, and consequently is an "aquitard" (as opposed to "aquifer"). The "sand and gravel" unit, thought to be derived from glacial rivers, is a well-sorted, highly-permeable aquifer, and is the largest source of potable groundwater in Mountrail County. The "silt and clay" unit is another low-permeability aquitard, and was deposited in larger glacial lakes.

23 (1118) Fort Union Group, including Sentinel Butte, Bullion Creek, Slope, Cannonball and Ludlow Formations, Paleocene: Predominately Sand, silt and clay, brownish-gray, varying amounts of sand, lignite, natural brick, limestone, and sandstone; river, lake, and swamp sediment with some marine deposits. Sentinel Butte, Bullion Creek and Slope Formations are equivalent to strata previously referred to the Tongue River Formation.

1141 (370) Hell Creek, Cretaceous: sand, somber shades of light-gray to brownish-gray, and cross bedded sandstone with lignite shale and dark-purple, manganese-oxide – stained concretions; river sediment and some estuarine sediment.

1511 (243) Fox Hills, Cretaceous: Silt and shale, sandy shale, sandstone, and siltstone, shades of buff to yellowish-brown; interbedded with lignitic shale laminae; some beds fossiliferous; intermittent sandstone at top is grayish-brown to white, fine, siliceous; silt and shale gradational downward with shale of the Pierre Formation; largely marine coastal sediment.

1754 (1917) Pierre, Cretaceous: Shale, light to medium or dark-gray, fissile, flaky to blocky, generally noncalcareous; marine offshore sediment.

3671 (265) Niobrara, Cretaceous: Shale, medium-light-gray to medium-gray, calcareous with white, limey inclusions ("First White Specks"); marly zone near the middle.

3936 (245) Carlile, Cretaceous: Shale, medium-dark-gray to black, non-calcareous, soft; large ellipsoidal concretions containing abundant gypsum (selenite); zone of fine, secondary crystals at the top.
4181 (163) Greenhorn, Cretaceous: Shale, dark gray, calcareous, soft; thin-bedded shaly limestone; good electric and radioactivity log marker; ("Second White Specks").

4344 (221) Belle Fourche, Cretaceous: Shale, medium to dark-gray, soft, micaceous, lumpy to massive, spongy, includes beds of light-bluish-gray bentonitic clay.

4586 (354) Mowry/Skull Creek, Cretaceous: Shale, medium to dark gray, soft, flakey to splintery, spongy; traces of light-blue-gray bentonitic clay with no effective porosity or permeability; top is marked by radioactive zone. In the southern Mountrail County area, the sandy Newcastle Formation ("Muddy") is absent, and the Mowry is instead underlain by the Skull Creek: shale, medium to dark gray, micaceous, soft, flaky to lumpy.

Note: with respect to the proposed saltwater injection, the "upper confining interval" consists of all of the shaley units described above, from Skull Creek/Mowry through Pierre.

4906 (400) Inyan Kara, Cretaceous (Injection Zone): Upper part is mainly marine sandstone, light-gray, fine to coarse, quartzose; and shale, gray, silty, and lumpy. Lower part is mainly nonmarine sandstone, medium to coarse, angular to subrounded, quartzose, occasional lenses of gray, bentonitic shale commonly contains manganese-siderite spherulites (pellets).

5306 (433) Swift, Jurassic (Lower Confining Interval): Shale, dark-gray to greenish, fissile, waxy, silty, calcareous; local limestone and glauconitic sandstone.

References:

1. Clayton, Lee, 1972. "Geology of Mountrail County, North Dakota", *North Dakota Geological Survey Bulletin 55-IV.*

2. Bluemle, John P., Sidney B. Anderson, John A. Andrew, David W. Fischer and Julie A. LeFever, 1986. "North Dakota Stratigraphic Column", *North Dakota Geological Survey Miscellaneous Series 66.*

Pace Analytical Services, LLC
150 N Ninth Street
Billings, MT 59101
(406)254-7226

ATTACHMENT H-1
PAGE 1 of 5

ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Diamondback 3-21H **Lab ID: 10408621001** Collected: 10/25/17 07:45 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015C GCS THC-Diesel	Analytical Method: EPA 8015C Modified Preparation Method: EPA Mod. 3510C							
Motor Oil Range (C24-C36)	**3.4**	mg/L	0.67	10	10/26/17 19:52	10/28/17 20:16		
TPH-DRO (C10-C28)	**6.1**	mg/L	0.33	10	10/26/17 19:52	10/28/17 20:16		
Surrogates								
o-Terphenyl (S)	0	%.	75-125	10	10/26/17 19:52	10/28/17 20:16	84-15-1	S4
n-Triacontane (S)	0	%.	60-125	10	10/26/17 19:52	10/28/17 20:16	638-68-6	S4
8015M Alcohols in water	Analytical Method: EPA 8015 Alcohol-Glycol							
Methanol	ND	mg/L	5.0	1		10/30/17 11:20	67-56-1	
8015C GCV GRO	Analytical Method: EPA 8015C							
Gasoline Range Organics	**2160**	ug/L	100	1		11/01/17 20:22		HS
Surrogates								
a,a,a-Trifluorotoluene (S)	91	%.	75-125	1		11/01/17 20:22	98-08-8	pH
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**295000**	ug/L	3750	25	10/27/17 11:44	10/30/17 09:33	7440-42-8	
Iron	**272000**	ug/L	1250	25	10/27/17 11:44	10/30/17 09:33	7439-89-6	
Manganese	**8980**	ug/L	125	25	10/27/17 11:44	10/30/17 09:33	7439-96-5	
Titanium	ND	ug/L	625	25	10/27/17 11:44	10/30/17 09:33	7440-32-6	D3
Calcium	**15100000**	ug/L	12500	25	10/27/17 11:44	10/30/17 09:33	7440-70-2	
Magnesium	**1450000**	ug/L	12500	25	10/27/17 11:44	10/30/17 09:33	7439-95-4	
Tin	ND	ug/L	1880	25	10/27/17 11:44	10/30/17 09:33	7440-31-5	D3
Potassium	**6440000**	ug/L	62500	25	10/27/17 11:44	10/30/17 09:33	7440-09-7	
Sodium	**59300000**	ug/L	250000	250	10/27/17 11:44	10/30/17 10:15	7440-23-5	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Aluminum	ND	ug/L	1000	100	10/27/17 11:44	11/01/17 00:18	7429-90-5	D3
Antimony	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7440-36-0	D3
Arsenic	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7440-38-2	D3,M6
Barium	**9550**	ug/L	30.0	100	10/27/17 11:44	11/01/17 00:18	7440-39-3	M6
Beryllium	ND	ug/L	20.0	100	10/27/17 11:44	11/01/17 00:18	7440-41-7	D3,M6
Cadmium	ND	ug/L	8.0	100	10/27/17 11:44	11/01/17 00:18	7440-43-9	D3,M6
Chromium	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7440-47-3	D3
Cobalt	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7440-48-4	D3
Copper	ND	ug/L	100	100	10/27/17 11:44	11/01/17 00:18	7440-50-8	D3,M6
Lead	ND	ug/L	10.0	100	10/27/17 11:44	11/01/17 00:18	7439-92-1	D3,M6
Molybdenum	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7439-98-7	D3
Nickel	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7440-02-0	D3
Selenium	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7782-49-2	D3
Silica	**33200**	ug/L	10700	100	10/27/17 11:44	11/01/17 00:18	7631-86-9	
Silicon	**15500**	ug/L	5000	100	10/27/17 11:44	11/01/17 00:18	7440-21-3	M6
Silver	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7440-22-4	D3,M6
Thallium	**111**	ug/L	10.0	100	10/27/17 11:44	11/01/17 00:18	7440-28-0	
Uranium-238	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:18	7440-61-1	D3
Vanadium	ND	ug/L	100	100	10/27/17 11:44	11/01/17 00:18	7440-62-2	D3,M6
Zinc	**5910**	ug/L	500	100	10/27/17 11:44	11/01/17 00:18	7440-66-6	M6

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Diamondback 3-21H **Lab ID: 10408621001** Collected: 10/25/17 07:45 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	ug/L	2.0	1	10/30/17 10:23	10/30/17 17:57	7439-97-6	
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3520							
Phenol	**143**	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	108-95-2	
bis(2-Chloroethyl) ether	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	111-44-4	
2-Chlorophenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	106-46-7	
1,2-Dichlorobenzene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	95-50-1	
2-Methylphenol(o-Cresol)	**77.7**	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	95-48-7	
bis(2-Chloroisopropyl) ether	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	108-60-1	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	127	5	10/27/17 10:36	11/01/17 11:32		
N-Nitroso-di-n-propylamine	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	621-64-7	
Hexachloroethane	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	67-72-1	
Nitrobenzene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	98-95-3	
Isophorone	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	78-59-1	
2-Nitrophenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	88-75-5	
2,4-Dimethylphenol	ND	ug/L	316	5	10/27/17 10:36	11/01/17 11:32	105-67-9	
bis(2-Chloroethoxy)methane	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	111-91-1	
2,4-Dichlorophenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	120-82-1	
Naphthalene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	91-20-3	
4-Chloroaniline	ND	ug/L	316	5	10/27/17 10:36	11/01/17 11:32	106-47-8	
Hexachloro-1,3-butadiene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	59-50-7	
2-Methylnaphthalene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	91-57-6	
2,4,6-Trichlorophenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	95-95-4	
2-Chloronaphthalene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	91-58-7	
2-Nitroaniline	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	88-74-4	
Dimethylphthalate	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	131-11-3	
Acenaphthylene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	606-20-2	
3-Nitroaniline	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	99-09-2	
Acenaphthene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	83-32-9	
2,4-Dinitrophenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	51-28-5	
4-Nitrophenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	100-02-7	
Dibenzofuran	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	121-14-2	
Diethylphthalate	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	84-66-2	
4-Chlorophenylphenyl ether	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	7005-72-3	
Fluorene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	86-73-7	
4-Nitroaniline	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	86-30-6	
4-Bromophenylphenyl ether	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	101-55-3	
Hexachlorobenzene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	118-74-1	L2

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Diamondback 3-21H **Lab ID: 10408621001** Collected: 10/25/17 07:45 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3520							
Pentachlorophenol	ND	ug/L	127	5	10/27/17 10:36	11/01/17 11:32	87-86-5	
Phenanthrene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	85-01-8	
Anthracene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	120-12-7	
Di-n-butylphthalate	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	84-74-2	
Fluoranthene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	206-44-0	
Pyrene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	129-00-0	
Butylbenzylphthalate	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	316	5	10/27/17 10:36	11/01/17 11:32	91-94-1	
Benzo(a)anthracene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	56-55-3	
Chrysene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	117-81-7	
Di-n-octylphthalate	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	117-84-0	
Benzo(b)fluoranthene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	207-08-9	
Benzo(a)pyrene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	53-70-3	L2
Benzo(g,h,i)perylene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	191-24-2	L2
N-Nitrosodimethylamine	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	62-75-9	
1,2-Diphenylhydrazine	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	122-66-7	
Carbazole	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	86-74-8	
1-Methylnaphthalene	ND	ug/L	63.3	5	10/27/17 10:36	11/01/17 11:32	90-12-0	
Surrogates								
Nitrobenzene-d5 (S)	89	%.	44-125	5	10/27/17 10:36	11/01/17 11:32	4165-60-0	D3
2-Fluorobiphenyl (S)	96	%.	30-125	5	10/27/17 10:36	11/01/17 11:32	321-60-8	
p-Terphenyl-d14 (S)	97	%.	31-125	5	10/27/17 10:36	11/01/17 11:32	1718-51-0	
Phenol-d6 (S)	96	%.	59-125	5	10/27/17 10:36	11/01/17 11:32	13127-88-3	
2-Fluorophenol (S)	87	%.	49-125	5	10/27/17 10:36	11/01/17 11:32	367-12-4	
2,4,6-Tribromophenol (S)	100	%.	66-125	5	10/27/17 10:36	11/01/17 11:32	118-79-6	
8260B MSV	Analytical Method: EPA 8260B							
Acetone	**11600**	ug/L	500	25		11/08/17 22:25	67-64-1	
Allyl chloride	ND	ug/L	100	25		11/08/17 22:25	107-05-1	
Benzene	**358**	ug/L	25.0	25		11/08/17 22:25	71-43-2	
Bromobenzene	ND	ug/L	25.0	25		11/08/17 22:25	108-86-1	
Bromochloromethane	ND	ug/L	25.0	25		11/08/17 22:25	74-97-5	
Bromodichloromethane	ND	ug/L	25.0	25		11/08/17 22:25	75-27-4	
Bromoform	ND	ug/L	100	25		11/08/17 22:25	75-25-2	
Bromomethane	ND	ug/L	100	25		11/08/17 22:25	74-83-9	CL
2-Butanone (MEK)	ND	ug/L	125	25		11/08/17 22:25	78-93-3	
n-Butylbenzene	ND	ug/L	25.0	25		11/08/17 22:25	104-51-8	
sec-Butylbenzene	ND	ug/L	25.0	25		11/08/17 22:25	135-98-8	
tert-Butylbenzene	ND	ug/L	25.0	25		11/08/17 22:25	98-06-6	
Carbon tetrachloride	ND	ug/L	25.0	25		11/08/17 22:25	56-23-5	
Chlorobenzene	ND	ug/L	25.0	25		11/08/17 22:25	108-90-7	
Chloroethane	ND	ug/L	25.0	25		11/08/17 22:25	75-00-3	
Chloroform	ND	ug/L	25.0	25		11/08/17 22:25	67-66-3	

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Diamondback 3-21H **Lab ID: 10408621001** Collected: 10/25/17 07:45 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV	Analytical Method: EPA 8260B							
Chloromethane	ND	ug/L	100	25		11/08/17 22:25	74-87-3	
2-Chlorotoluene	ND	ug/L	25.0	25		11/08/17 22:25	95-49-8	
4-Chlorotoluene	ND	ug/L	25.0	25		11/08/17 22:25	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	100	25		11/08/17 22:25	96-12-8	
Dibromochloromethane	ND	ug/L	25.0	25		11/08/17 22:25	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	25.0	25		11/08/17 22:25	106-93-4	
Dibromomethane	ND	ug/L	100	25		11/08/17 22:25	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:25	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:25	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:25	106-46-7	
Dichlorodifluoromethane	ND	ug/L	25.0	25		11/08/17 22:25	75-71-8	
1,1-Dichloroethane	ND	ug/L	25.0	25		11/08/17 22:25	75-34-3	
1,2-Dichloroethane	ND	ug/L	25.0	25		11/08/17 22:25	107-06-2	
1,1-Dichloroethene	ND	ug/L	25.0	25		11/08/17 22:25	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	25.0	25		11/08/17 22:25	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	25.0	25		11/08/17 22:25	156-60-5	
Dichlorofluoromethane	ND	ug/L	25.0	25		11/08/17 22:25	75-43-4	
1,2-Dichloropropane	ND	ug/L	100	25		11/08/17 22:25	78-87-5	
1,3-Dichloropropane	ND	ug/L	25.0	25		11/08/17 22:25	142-28-9	
2,2-Dichloropropane	ND	ug/L	100	25		11/08/17 22:25	594-20-7	
1,1-Dichloropropene	ND	ug/L	25.0	25		11/08/17 22:25	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	100	25		11/08/17 22:25	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	100	25		11/08/17 22:25	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	100	25		11/08/17 22:25	60-29-7	
Ethylbenzene	ND	ug/L	25.0	25		11/08/17 22:25	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	25.0	25		11/08/17 22:25	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	25.0	25		11/08/17 22:25	98-82-8	
p-Isopropyltoluene	ND	ug/L	25.0	25		11/08/17 22:25	99-87-6	
Methylene Chloride	ND	ug/L	100	25		11/08/17 22:25	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	125	25		11/08/17 22:25	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	25.0	25		11/08/17 22:25	1634-04-4	
Naphthalene	ND	ug/L	100	25		11/08/17 22:25	91-20-3	
n-Propylbenzene	ND	ug/L	25.0	25		11/08/17 22:25	103-65-1	
Styrene	ND	ug/L	25.0	25		11/08/17 22:25	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	25.0	25		11/08/17 22:25	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	25.0	25		11/08/17 22:25	79-34-5	
Tetrachloroethene	ND	ug/L	25.0	25		11/08/17 22:25	127-18-4	
Tetrahydrofuran	ND	ug/L	250	25		11/08/17 22:25	109-99-9	
Toluene	167	ug/L	25.0	25		11/08/17 22:25	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:25	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:25	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	25.0	25		11/08/17 22:25	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	25.0	25		11/08/17 22:25	79-00-5	
Trichloroethene	ND	ug/L	10.0	25		11/08/17 22:25	79-01-6	
Trichlorofluoromethane	ND	ug/L	25.0	25		11/08/17 22:25	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	100	25		11/08/17 22:25	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	25.0	25		11/08/17 22:25	76-13-1	

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Diamondback 3-21H **Lab ID: 10408621001** Collected: 10/25/17 07:45 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV	Analytical Method: EPA 8260B							
1,2,4-Trimethylbenzene	ND	ug/L	25.0	25		11/08/17 22:25	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	25.0	25		11/08/17 22:25	108-67-8	
Vinyl chloride	ND	ug/L	5.0	25		11/08/17 22:25	75-01-4	
Xylene (Total)	ND	ug/L	75.0	25		11/08/17 22:25	1330-20-7	
m&p-Xylene	ND	ug/L	50.0	25		11/08/17 22:25	179601-23-1	
o-Xylene	**30.6**	ug/L	25.0	25		11/08/17 22:25	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	86	%.	75-137	25		11/08/17 22:25	17060-07-0	
Toluene-d8 (S)	93	%.	75-125	25		11/08/17 22:25	2037-26-5	
4-Bromofluorobenzene (S)	99	%.	75-125	25		11/08/17 22:25	460-00-4	
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D							
Sulfide	ND	mg/L	0.10	1		10/30/17 17:11		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**119**	mg/L	5.0	1		10/27/17 09:56		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**181000**	mg/L	1000	1		10/31/17 10:52		
SM2510 Specific Conductance	Analytical Method: SM 2510							
Specific Conductance	**160000**	umhos/cm	1.0	1		10/31/17 11:17		E
Specific Gravity	Analytical Method: ASTM D5057							
Specific Gravity	**1.18**			1		10/27/17 11:09		
300.0 IC Anions	Analytical Method: EPA 300.0							
Chloride	**155000**	mg/L	2400	2000		10/30/17 18:49	16887-00-6	
Sulfate	**300**	mg/L	120	100		10/30/17 10:48	14808-79-8	

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Water Moccasin 4-34TFH **Lab ID: 10408622001** Collected: 10/25/17 08:06 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015C GCS THC-Diesel	Analytical Method: EPA 8015C Modified Preparation Method: EPA Mod. 3510C							
Motor Oil Range (C24-C36)	**9.6**	mg/L	0.83	10	10/26/17 19:52	10/28/17 20:05		
TPH-DRO (C10-C28)	**16.3**	mg/L	0.42	10	10/26/17 19:52	10/28/17 20:05		
Surrogates								
o-Terphenyl (S)	0	%.	75-125	10	10/26/17 19:52	10/28/17 20:05	84-15-1	S4
n-Triacontane (S)	0	%.	60-125	10	10/26/17 19:52	10/28/17 20:05	638-68-6	S4
8015M Alcohols in water	Analytical Method: EPA 8015 Alcohol-Glycol							
Methanol	**5.7**	mg/L	5.0	1		10/30/17 11:30	67-56-1	
8015C GCV GRO	Analytical Method: EPA 8015C							
Gasoline Range Organics	**1100**	ug/L	100	1		11/02/17 20:33		HS
Surrogates								
a,a,a-Trifluorotoluene (S)	83	%.	75-125	1		11/02/17 20:33	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Boron	**334000**	ug/L	3750	25	10/27/17 11:44	10/30/17 09:36	7440-42-8	
Iron	**162000**	ug/L	1250	25	10/27/17 11:44	10/30/17 09:36	7439-89-6	
Manganese	**9340**	ug/L	125	25	10/27/17 11:44	10/30/17 09:36	7439-96-5	
Titanium	ND	ug/L	625	25	10/27/17 11:44	10/30/17 09:36	7440-32-6	D3
Calcium	**18200000**	ug/L	12500	25	10/27/17 11:44	10/30/17 09:36	7440-70-2	
Magnesium	**1620000**	ug/L	12500	25	10/27/17 11:44	10/30/17 09:36	7439-95-4	
Tin	ND	ug/L	1880	25	10/27/17 11:44	10/30/17 09:36	7440-31-5	D3
Potassium	**7390000**	ug/L	62500	25	10/27/17 11:44	10/30/17 09:36	7440-09-7	
Sodium	**58500000**	ug/L	250000	250	10/27/17 11:44	10/30/17 10:18	7440-23-5	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Aluminum	ND	ug/L	1000	100	10/27/17 11:44	11/01/17 00:08	7429-90-5	D3
Antimony	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7440-36-0	D3
Arsenic	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7440-38-2	D3
Barium	**8890**	ug/L	30.0	100	10/27/17 11:44	11/01/17 00:08	7440-39-3	
Beryllium	ND	ug/L	20.0	100	10/27/17 11:44	11/01/17 00:08	7440-41-7	D3
Cadmium	ND	ug/L	8.0	100	10/27/17 11:44	11/01/17 00:08	7440-43-9	D3
Chromium	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7440-47-3	D3
Cobalt	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7440-48-4	D3
Copper	ND	ug/L	100	100	10/27/17 11:44	11/01/17 00:08	7440-50-8	D3
Lead	ND	ug/L	10.0	100	10/27/17 11:44	11/01/17 00:08	7439-92-1	D3
Molybdenum	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7439-98-7	D3
Nickel	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7440-02-0	D3
Selenium	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7782-49-2	D3
Silica	**28300**	ug/L	10700	100	10/27/17 11:44	11/01/17 00:08	7631-86-9	
Silicon	**13200**	ug/L	5000	100	10/27/17 11:44	11/01/17 00:08	7440-21-3	
Silver	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7440-22-4	D3
Thallium	**137**	ug/L	10.0	100	10/27/17 11:44	11/01/17 00:08	7440-28-0	
Uranium-238	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:08	7440-61-1	D3
Vanadium	ND	ug/L	100	100	10/27/17 11:44	11/01/17 00:08	7440-62-2	D3
Zinc	**9040**	ug/L	500	100	10/27/17 11:44	11/01/17 00:08	7440-66-6	

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Water Moccasin 4-34TFH **Lab ID: 10408622001** Collected: 10/25/17 08:06 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	ug/L	2.0	1	10/30/17 10:23	10/30/17 17:59	7439-97-6	M1,R1
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3520							
Phenol	**137**	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	108-95-2	
bis(2-Chloroethyl) ether	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	111-44-4	
2-Chlorophenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	106-46-7	
1,2-Dichlorobenzene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	95-50-1	
2-Methylphenol(o-Cresol)	**56.8**	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	95-48-7	
bis(2-Chloroisopropyl) ether	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	108-60-1	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	108	5	10/27/17 10:36	11/01/17 12:01		
N-Nitroso-di-n-propylamine	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	621-64-7	
Hexachloroethane	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	67-72-1	
Nitrobenzene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	98-95-3	
Isophorone	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	78-59-1	
2-Nitrophenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	88-75-5	
2,4-Dimethylphenol	ND	ug/L	269	5	10/27/17 10:36	11/01/17 12:01	105-67-9	
bis(2-Chloroethoxy)methane	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	111-91-1	
2,4-Dichlorophenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	120-82-1	
Naphthalene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	91-20-3	
4-Chloroaniline	ND	ug/L	269	5	10/27/17 10:36	11/01/17 12:01	106-47-8	
Hexachloro-1,3-butadiene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	59-50-7	
2-Methylnaphthalene	**55.6**	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	91-57-6	
2,4,6-Trichlorophenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	95-95-4	
2-Chloronaphthalene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	91-58-7	
2-Nitroaniline	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	88-74-4	
Dimethylphthalate	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	131-11-3	
Acenaphthylene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	606-20-2	
3-Nitroaniline	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	99-09-2	
Acenaphthene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	83-32-9	
2,4-Dinitrophenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	51-28-5	
4-Nitrophenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	100-02-7	
Dibenzofuran	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	121-14-2	
Diethylphthalate	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	84-66-2	
4-Chlorophenylphenyl ether	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	7005-72-3	
Fluorene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	86-73-7	
4-Nitroaniline	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	86-30-6	
4-Bromophenylphenyl ether	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	101-55-3	
Hexachlorobenzene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	118-74-1	L2

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Water Moccasin 4-34TFH **Lab ID: 10408622001** Collected: 10/25/17 08:06 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3520							
Pentachlorophenol	ND	ug/L	108	5	10/27/17 10:36	11/01/17 12:01	87-86-5	
Phenanthrene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	85-01-8	
Anthracene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	120-12-7	
Di-n-butylphthalate	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	84-74-2	
Fluoranthene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	206-44-0	
Pyrene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	129-00-0	
Butylbenzylphthalate	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	269	5	10/27/17 10:36	11/01/17 12:01	91-94-1	
Benzo(a)anthracene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	56-55-3	
Chrysene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	117-81-7	
Di-n-octylphthalate	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	117-84-0	
Benzo(b)fluoranthene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	207-08-9	
Benzo(a)pyrene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	53-70-3	L2
Benzo(g,h,i)perylene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	191-24-2	L2
N-Nitrosodimethylamine	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	62-75-9	
1,2-Diphenylhydrazine	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	122-66-7	
Carbazole	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	86-74-8	
1-Methylnaphthalene	ND	ug/L	53.8	5	10/27/17 10:36	11/01/17 12:01	90-12-0	
Surrogates								
Nitrobenzene-d5 (S)	90	%.	44-125	5	10/27/17 10:36	11/01/17 12:01	4165-60-0	D3
2-Fluorobiphenyl (S)	97	%.	30-125	5	10/27/17 10:36	11/01/17 12:01	321-60-8	
p-Terphenyl-d14 (S)	97	%.	31-125	5	10/27/17 10:36	11/01/17 12:01	1718-51-0	
Phenol-d6 (S)	91	%.	59-125	5	10/27/17 10:36	11/01/17 12:01	13127-88-3	
2-Fluorophenol (S)	87	%.	49-125	5	10/27/17 10:36	11/01/17 12:01	367-12-4	
2,4,6-Tribromophenol (S)	97	%.	66-125	5	10/27/17 10:36	11/01/17 12:01	118-79-6	
8260B MSV	Analytical Method: EPA 8260B							
Acetone	**5390**	ug/L	500	25		11/08/17 22:49	67-64-1	
Allyl chloride	ND	ug/L	100	25		11/08/17 22:49	107-05-1	
Benzene	**231**	ug/L	25.0	25		11/08/17 22:49	71-43-2	
Bromobenzene	ND	ug/L	25.0	25		11/08/17 22:49	108-86-1	
Bromochloromethane	ND	ug/L	25.0	25		11/08/17 22:49	74-97-5	
Bromodichloromethane	ND	ug/L	25.0	25		11/08/17 22:49	75-27-4	
Bromoform	ND	ug/L	100	25		11/08/17 22:49	75-25-2	
Bromomethane	ND	ug/L	100	25		11/08/17 22:49	74-83-9	CL
2-Butanone (MEK)	ND	ug/L	125	25		11/08/17 22:49	78-93-3	
n-Butylbenzene	ND	ug/L	25.0	25		11/08/17 22:49	104-51-8	
sec-Butylbenzene	ND	ug/L	25.0	25		11/08/17 22:49	135-98-8	
tert-Butylbenzene	ND	ug/L	25.0	25		11/08/17 22:49	98-06-6	
Carbon tetrachloride	ND	ug/L	25.0	25		11/08/17 22:49	56-23-5	
Chlorobenzene	ND	ug/L	25.0	25		11/08/17 22:49	108-90-7	
Chloroethane	ND	ug/L	25.0	25		11/08/17 22:49	75-00-3	
Chloroform	ND	ug/L	25.0	25		11/08/17 22:49	67-66-3	

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Water Moccasin 4-34TFH **Lab ID: 10408622001** Collected: 10/25/17 08:06 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV	Analytical Method: EPA 8260B							
Chloromethane	ND	ug/L	100	25		11/08/17 22:49	74-87-3	
2-Chlorotoluene	ND	ug/L	25.0	25		11/08/17 22:49	95-49-8	
4-Chlorotoluene	ND	ug/L	25.0	25		11/08/17 22:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	100	25		11/08/17 22:49	96-12-8	
Dibromochloromethane	ND	ug/L	25.0	25		11/08/17 22:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	25.0	25		11/08/17 22:49	106-93-4	
Dibromomethane	ND	ug/L	100	25		11/08/17 22:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:49	106-46-7	
Dichlorodifluoromethane	ND	ug/L	25.0	25		11/08/17 22:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	25.0	25		11/08/17 22:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	25.0	25		11/08/17 22:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	25.0	25		11/08/17 22:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	25.0	25		11/08/17 22:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	25.0	25		11/08/17 22:49	156-60-5	
Dichlorofluoromethane	ND	ug/L	25.0	25		11/08/17 22:49	75-43-4	
1,2-Dichloropropane	ND	ug/L	100	25		11/08/17 22:49	78-87-5	
1,3-Dichloropropane	ND	ug/L	25.0	25		11/08/17 22:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	100	25		11/08/17 22:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	25.0	25		11/08/17 22:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	100	25		11/08/17 22:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	100	25		11/08/17 22:49	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	100	25		11/08/17 22:49	60-29-7	
Ethylbenzene	ND	ug/L	25.0	25		11/08/17 22:49	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	25.0	25		11/08/17 22:49	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	25.0	25		11/08/17 22:49	98-82-8	
p-Isopropyltoluene	ND	ug/L	25.0	25		11/08/17 22:49	99-87-6	
Methylene Chloride	ND	ug/L	100	25		11/08/17 22:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	125	25		11/08/17 22:49	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	25.0	25		11/08/17 22:49	1634-04-4	
Naphthalene	ND	ug/L	100	25		11/08/17 22:49	91-20-3	
n-Propylbenzene	ND	ug/L	25.0	25		11/08/17 22:49	103-65-1	
Styrene	ND	ug/L	25.0	25		11/08/17 22:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	25.0	25		11/08/17 22:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	25.0	25		11/08/17 22:49	79-34-5	
Tetrachloroethene	ND	ug/L	25.0	25		11/08/17 22:49	127-18-4	
Tetrahydrofuran	ND	ug/L	250	25		11/08/17 22:49	109-99-9	
Toluene	**131**	ug/L	25.0	25		11/08/17 22:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	25.0	25		11/08/17 22:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	25.0	25		11/08/17 22:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	25.0	25		11/08/17 22:49	79-00-5	
Trichloroethene	ND	ug/L	10.0	25		11/08/17 22:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	25.0	25		11/08/17 22:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	100	25		11/08/17 22:49	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	25.0	25		11/08/17 22:49	76-13-1	

REPORT OF LABORATORY ANALYSIS

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(406)254-7226

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Water Moccasin 4-34TFH **Lab ID: 10408622001** Collected: 10/25/17 08:06 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV	Analytical Method: EPA 8260B							
1,2,4-Trimethylbenzene	ND	ug/L	25.0	25		11/08/17 22:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	25.0	25		11/08/17 22:49	108-67-8	
Vinyl chloride	ND	ug/L	5.0	25		11/08/17 22:49	75-01-4	
Xylene (Total)	ND	ug/L	75.0	25		11/08/17 22:49	1330-20-7	
m&p-Xylene	ND	ug/L	50.0	25		11/08/17 22:49	179601-23-1	
o-Xylene	**25.7**	ug/L	25.0	25		11/08/17 22:49	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	86	%.	75-137	25		11/08/17 22:49	17060-07-0	
Toluene-d8 (S)	94	%.	75-125	25		11/08/17 22:49	2037-26-5	
4-Bromofluorobenzene (S)	96	%.	75-125	25		11/08/17 22:49	460-00-4	
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D							
Sulfide	ND	mg/L	0.10	1		10/30/17 17:12		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**99.9**	mg/L	5.0	1		10/27/17 09:59		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**198000**	mg/L	1000	1		10/31/17 10:52		
SM2510 Specific Conductance	Analytical Method: SM 2510							
Specific Conductance	**164000**	umhos/cm	1.0	1		10/31/17 11:18		E
Specific Gravity	Analytical Method: ASTM D5057							
Specific Gravity	**1.21**			1		10/27/17 11:12		
300.0 IC Anions	Analytical Method: EPA 300.0							
Chloride	**169000**	mg/L	2400	2000		10/30/17 16:53	16887-00-6	
Sulfate	**250**	mg/L	120	100		10/30/17 13:10	14808-79-8	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Jericho 2-5-TFH **Lab ID: 10408623001** Collected: 10/25/17 08:28 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015C GCS THC-Diesel	Analytical Method: EPA 8015C Modified Preparation Method: EPA Mod. 3510C							
Motor Oil Range (C24-C36)	**2.6**	mg/L	0.83	10	10/26/17 19:52	10/28/17 20:26		
TPH-DRO (C10-C28)	**5.7**	mg/L	0.42	10	10/26/17 19:52	10/28/17 20:26		
Surrogates								
o-Terphenyl (S)	0	%.	75-125	10	10/26/17 19:52	10/28/17 20:26	84-15-1	S4
n-Triacontane (S)	0	%.	60-125	10	10/26/17 19:52	10/28/17 20:26	638-68-6	S4
8015M Alcohols in water	Analytical Method: EPA 8015 Alcohol-Glycol							
Methanol	ND	mg/L	5.0	1		10/30/17 11:39	67-56-1	
8015C GCV GRO	Analytical Method: EPA 8015C							
Gasoline Range Organics	**1350**	ug/L	100	1		11/02/17 20:50		HS
Surrogates								
a,a,a-Trifluorotoluene (S)	82	%.	75-125	1		11/02/17 20:50	98-08-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010							
Sodium	**53500000**	ug/L	250000	250	10/27/17 11:44	10/30/17 10:21	7440-23-5	
Boron	**384000**	ug/L	3750	25	10/27/17 11:44	10/30/17 09:39	7440-42-8	
Iron	**201000**	ug/L	1250	25	10/27/17 11:44	10/30/17 09:39	7439-89-6	
Manganese	**9180**	ug/L	125	25	10/27/17 11:44	10/30/17 09:39	7439-96-5	
Titanium	ND	ug/L	625	25	10/27/17 11:44	10/30/17 09:39	7440-32-6	D3
Calcium	**18500000**	ug/L	12500	25	10/27/17 11:44	10/30/17 09:39	7440-70-2	
Magnesium	**1620000**	ug/L	12500	25	10/27/17 11:44	10/30/17 09:39	7439-95-4	
Tin	ND	ug/L	1880	25	10/27/17 11:44	10/30/17 09:39	7440-31-5	D3
Potassium	**8230000**	ug/L	62500	25	10/27/17 11:44	10/30/17 09:39	7440-09-7	
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3020							
Aluminum	ND	ug/L	1000	100	10/27/17 11:44	11/01/17 00:13	7429-90-5	D3
Antimony	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7440-36-0	D3
Arsenic	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7440-38-2	D3
Barium	**13200**	ug/L	30.0	100	10/27/17 11:44	11/01/17 00:13	7440-39-3	
Beryllium	ND	ug/L	20.0	100	10/27/17 11:44	11/01/17 00:13	7440-41-7	D3
Cadmium	ND	ug/L	8.0	100	10/27/17 11:44	11/01/17 00:13	7440-43-9	D3
Chromium	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7440-47-3	D3
Cobalt	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7440-48-4	D3
Copper	ND	ug/L	100	100	10/27/17 11:44	11/01/17 00:13	7440-50-8	D3
Lead	ND	ug/L	10.0	100	10/27/17 11:44	11/01/17 00:13	7439-92-1	D3
Molybdenum	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7439-98-7	D3
Nickel	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7440-02-0	D3
Selenium	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7782-49-2	D3
Silica	**34800**	ug/L	10700	100	10/27/17 11:44	11/01/17 00:13	7631-86-9	
Silicon	**16300**	ug/L	5000	100	10/27/17 11:44	11/01/17 00:13	7440-21-3	
Silver	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7440-22-4	D3
Thallium	**248**	ug/L	10.0	100	10/27/17 11:44	11/01/17 00:13	7440-28-0	
Uranium-238	ND	ug/L	50.0	100	10/27/17 11:44	11/01/17 00:13	7440-61-1	D3
Vanadium	ND	ug/L	100	100	10/27/17 11:44	11/01/17 00:13	7440-62-2	D3
Zinc	**12600**	ug/L	500	100	10/27/17 11:44	11/01/17 00:13	7440-66-6	

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Jericho 2-5-TFH **Lab ID: 10408623001** Collected: 10/25/17 08:28 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
7470A Mercury	Analytical Method: EPA 7470A Preparation Method: EPA 7470A							
Mercury	ND	ug/L	2.0	1	10/30/17 10:23	10/30/17 18:06	7439-97-6	
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3520							
Phenol	113	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	108-95-2	
bis(2-Chloroethyl) ether	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	111-44-4	
2-Chlorophenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	95-57-8	
1,3-Dichlorobenzene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	106-46-7	
1,2-Dichlorobenzene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	95-50-1	
2-Methylphenol(o-Cresol)	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	95-48-7	
bis(2-Chloroisopropyl) ether	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	108-60-1	
3&4-Methylphenol(m&p Cresol)	ND	ug/L	148	5	10/27/17 10:36	11/01/17 12:31		
N-Nitroso-di-n-propylamine	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	621-64-7	
Hexachloroethane	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	67-72-1	
Nitrobenzene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	98-95-3	
Isophorone	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	78-59-1	
2-Nitrophenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	88-75-5	
2,4-Dimethylphenol	ND	ug/L	370	5	10/27/17 10:36	11/01/17 12:31	105-67-9	
bis(2-Chloroethoxy)methane	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	111-91-1	
2,4-Dichlorophenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	120-83-2	
1,2,4-Trichlorobenzene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	120-82-1	
Naphthalene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	91-20-3	
4-Chloroaniline	ND	ug/L	370	5	10/27/17 10:36	11/01/17 12:31	106-47-8	
Hexachloro-1,3-butadiene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	87-68-3	
4-Chloro-3-methylphenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	59-50-7	
2-Methylnaphthalene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	91-57-6	
2,4,6-Trichlorophenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	88-06-2	
2,4,5-Trichlorophenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	95-95-4	
2-Chloronaphthalene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	91-58-7	
2-Nitroaniline	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	88-74-4	
Dimethylphthalate	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	131-11-3	
Acenaphthylene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	208-96-8	
2,6-Dinitrotoluene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	606-20-2	
3-Nitroaniline	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	99-09-2	
Acenaphthene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	83-32-9	
2,4-Dinitrophenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	51-28-5	
4-Nitrophenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	100-02-7	
Dibenzofuran	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	132-64-9	
2,4-Dinitrotoluene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	121-14-2	
Diethylphthalate	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	84-66-2	
4-Chlorophenylphenyl ether	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	7005-72-3	
Fluorene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	86-73-7	
4-Nitroaniline	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	100-01-6	
4,6-Dinitro-2-methylphenol	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	534-52-1	
N-Nitrosodiphenylamine	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	86-30-6	
4-Bromophenylphenyl ether	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	101-55-3	
Hexachlorobenzene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	118-74-1	L2

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Jericho 2-5-TFH **Lab ID: 10408623001** Collected: 10/25/17 08:28 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8270D MSSV	Analytical Method: EPA 8270D Preparation Method: EPA 3520							
Pentachlorophenol	ND	ug/L	148	5	10/27/17 10:36	11/01/17 12:31	87-86-5	
Phenanthrene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	85-01-8	
Anthracene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	120-12-7	
Di-n-butylphthalate	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	84-74-2	
Fluoranthene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	206-44-0	
Pyrene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	129-00-0	
Butylbenzylphthalate	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	85-68-7	
3,3'-Dichlorobenzidine	ND	ug/L	370	5	10/27/17 10:36	11/01/17 12:31	91-94-1	
Benzo(a)anthracene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	56-55-3	
Chrysene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	218-01-9	
bis(2-Ethylhexyl)phthalate	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	117-81-7	
Di-n-octylphthalate	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	117-84-0	
Benzo(b)fluoranthene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	205-99-2	
Benzo(k)fluoranthene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	207-08-9	
Benzo(a)pyrene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	50-32-8	
Indeno(1,2,3-cd)pyrene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	193-39-5	
Dibenz(a,h)anthracene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	53-70-3	L2
Benzo(g,h,i)perylene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	191-24-2	L2
N-Nitrosodimethylamine	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	62-75-9	
1,2-Diphenylhydrazine	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	122-66-7	
Carbazole	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	86-74-8	
1-Methylnaphthalene	ND	ug/L	74.1	5	10/27/17 10:36	11/01/17 12:31	90-12-0	
Surrogates								
Nitrobenzene-d5 (S)	79	%.	44-125	5	10/27/17 10:36	11/01/17 12:31	4165-60-0	D3
2-Fluorobiphenyl (S)	88	%.	30-125	5	10/27/17 10:36	11/01/17 12:31	321-60-8	
p-Terphenyl-d14 (S)	88	%.	31-125	5	10/27/17 10:36	11/01/17 12:31	1718-51-0	
Phenol-d6 (S)	85	%.	59-125	5	10/27/17 10:36	11/01/17 12:31	13127-88-3	
2-Fluorophenol (S)	80	%.	49-125	5	10/27/17 10:36	11/01/17 12:31	367-12-4	
2,4,6-Tribromophenol (S)	87	%.	66-125	5	10/27/17 10:36	11/01/17 12:31	118-79-6	
8260B MSV	Analytical Method: EPA 8260B							
Acetone	**2730**	ug/L	200	10		11/08/17 20:49	67-64-1	
Allyl chloride	ND	ug/L	40.0	10		11/08/17 20:49	107-05-1	
Benzene	**359**	ug/L	10.0	10		11/08/17 20:49	71-43-2	
Bromobenzene	ND	ug/L	10.0	10		11/08/17 20:49	108-86-1	
Bromochloromethane	ND	ug/L	10.0	10		11/08/17 20:49	74-97-5	
Bromodichloromethane	ND	ug/L	10.0	10		11/08/17 20:49	75-27-4	
Bromoform	ND	ug/L	40.0	10		11/08/17 20:49	75-25-2	
Bromomethane	ND	ug/L	40.0	10		11/08/17 20:49	74-83-9	CL
2-Butanone (MEK)	**81.4**	ug/L	50.0	10		11/08/17 20:49	78-93-3	
n-Butylbenzene	ND	ug/L	10.0	10		11/08/17 20:49	104-51-8	
sec-Butylbenzene	ND	ug/L	10.0	10		11/08/17 20:49	135-98-8	
tert-Butylbenzene	ND	ug/L	10.0	10		11/08/17 20:49	98-06-6	
Carbon tetrachloride	ND	ug/L	10.0	10		11/08/17 20:49	56-23-5	
Chlorobenzene	ND	ug/L	10.0	10		11/08/17 20:49	108-90-7	
Chloroethane	ND	ug/L	10.0	10		11/08/17 20:49	75-00-3	
Chloroform	ND	ug/L	10.0	10		11/08/17 20:49	67-66-3	

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ANALYTICAL RESULTS

Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Jericho 2-5-TFH **Lab ID: 10408623001** Collected: 10/25/17 08:28 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV	Analytical Method: EPA 8260B							
Chloromethane	ND	ug/L	40.0	10		11/08/17 20:49	74-87-3	
2-Chlorotoluene	ND	ug/L	10.0	10		11/08/17 20:49	95-49-8	
4-Chlorotoluene	ND	ug/L	10.0	10		11/08/17 20:49	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	40.0	10		11/08/17 20:49	96-12-8	
Dibromochloromethane	ND	ug/L	10.0	10		11/08/17 20:49	124-48-1	
1,2-Dibromoethane (EDB)	ND	ug/L	10.0	10		11/08/17 20:49	106-93-4	
Dibromomethane	ND	ug/L	40.0	10		11/08/17 20:49	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	10.0	10		11/08/17 20:49	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	10.0	10		11/08/17 20:49	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	10.0	10		11/08/17 20:49	106-46-7	
Dichlorodifluoromethane	ND	ug/L	10.0	10		11/08/17 20:49	75-71-8	
1,1-Dichloroethane	ND	ug/L	10.0	10		11/08/17 20:49	75-34-3	
1,2-Dichloroethane	ND	ug/L	10.0	10		11/08/17 20:49	107-06-2	
1,1-Dichloroethene	ND	ug/L	10.0	10		11/08/17 20:49	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	10.0	10		11/08/17 20:49	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	10.0	10		11/08/17 20:49	156-60-5	
Dichlorofluoromethane	ND	ug/L	10.0	10		11/08/17 20:49	75-43-4	
1,2-Dichloropropane	ND	ug/L	40.0	10		11/08/17 20:49	78-87-5	
1,3-Dichloropropane	ND	ug/L	10.0	10		11/08/17 20:49	142-28-9	
2,2-Dichloropropane	ND	ug/L	40.0	10		11/08/17 20:49	594-20-7	
1,1-Dichloropropene	ND	ug/L	10.0	10		11/08/17 20:49	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	40.0	10		11/08/17 20:49	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	40.0	10		11/08/17 20:49	10061-02-6	
Diethyl ether (Ethyl ether)	ND	ug/L	40.0	10		11/08/17 20:49	60-29-7	
Ethylbenzene	**12.4**	ug/L	10.0	10		11/08/17 20:49	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	10.0	10		11/08/17 20:49	87-68-3	
Isopropylbenzene (Cumene)	ND	ug/L	10.0	10		11/08/17 20:49	98-82-8	
p-Isopropyltoluene	ND	ug/L	10.0	10		11/08/17 20:49	99-87-6	
Methylene Chloride	ND	ug/L	40.0	10		11/08/17 20:49	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	50.0	10		11/08/17 20:49	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	10.0	10		11/08/17 20:49	1634-04-4	
Naphthalene	ND	ug/L	40.0	10		11/08/17 20:49	91-20-3	
n-Propylbenzene	ND	ug/L	10.0	10		11/08/17 20:49	103-65-1	
Styrene	ND	ug/L	10.0	10		11/08/17 20:49	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	10.0	10		11/08/17 20:49	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	10.0	10		11/08/17 20:49	79-34-5	
Tetrachloroethene	ND	ug/L	10.0	10		11/08/17 20:49	127-18-4	
Tetrahydrofuran	ND	ug/L	100	10		11/08/17 20:49	109-99-9	
Toluene	**152**	ug/L	10.0	10		11/08/17 20:49	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	10.0	10		11/08/17 20:49	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	10.0	10		11/08/17 20:49	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	10.0	10		11/08/17 20:49	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	10.0	10		11/08/17 20:49	79-00-5	
Trichloroethene	ND	ug/L	4.0	10		11/08/17 20:49	79-01-6	
Trichlorofluoromethane	ND	ug/L	10.0	10		11/08/17 20:49	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	40.0	10		11/08/17 20:49	96-18-4	
1,1,2-Trichlorotrifluoroethane	ND	ug/L	10.0	10		11/08/17 20:49	76-13-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, LLC
150 N Ninth Street
Billings, MT 59101
(406)254-7226

ATTACHMENT H-3
PAGE 5 of 5

ANALYTICAL RESULTS

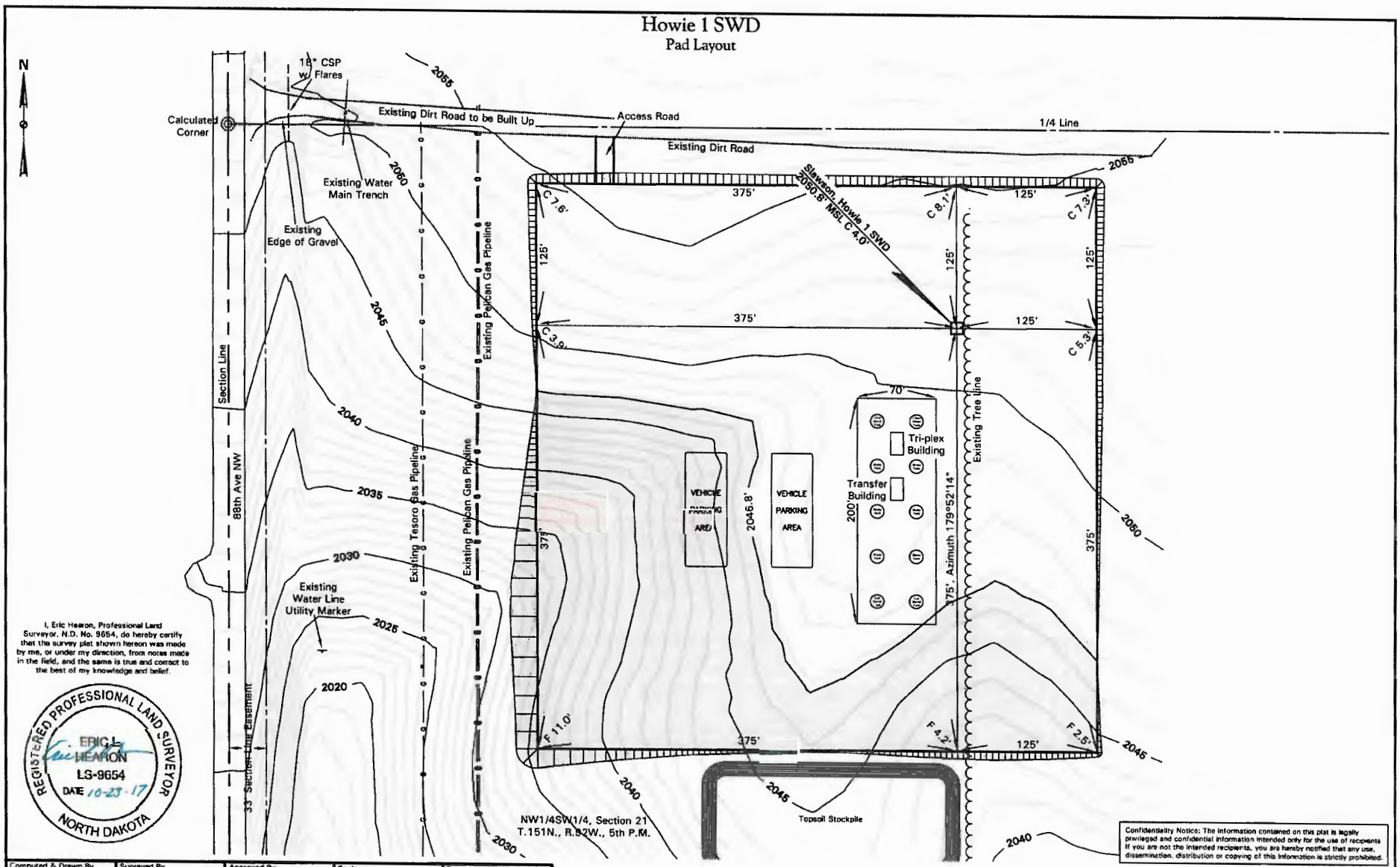
Project: Slawson Exploration
Pace Project No.: 10408620

Sample: Jericho 2-5-TFH **Lab ID: 10408623001** Collected: 10/25/17 08:28 Received: 10/26/17 10:00 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8260B MSV	Analytical Method: EPA 8260B							
1,2,4-Trimethylbenzene	**12.4**	ug/L	10.0	10		11/08/17 20:49	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	10.0	10		11/08/17 20:49	108-67-8	
Vinyl chloride	ND	ug/L	2.0	10		11/08/17 20:49	75-01-4	
Xylene (Total)	**64.4**	ug/L	30.0	10		11/08/17 20:49	1330-20-7	
m&p-Xylene	**39.2**	ug/L	20.0	10		11/08/17 20:49	179601-23-1	
o-Xylene	**25.2**	ug/L	10.0	10		11/08/17 20:49	95-47-6	
Surrogates								
1,2-Dichloroethane-d4 (S)	88	%.	75-137	10		11/08/17 20:49	17060-07-0	
Toluene-d8 (S)	95	%.	75-125	10		11/08/17 20:49	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	75-125	10		11/08/17 20:49	460-00-4	
4500S2D Sulfide Water	Analytical Method: SM 4500-S2-D							
Sulfide	**0.15**	mg/L	0.10	1		10/30/17 17:17		
2320B Alkalinity	Analytical Method: SM 2320B							
Alkalinity, Total as CaCO3	**124**	mg/L	5.0	1		10/27/17 10:02		
2540C Total Dissolved Solids	Analytical Method: SM 2540C							
Total Dissolved Solids	**253000**	mg/L	1000	1		10/31/17 10:52		
SM2510 Specific Conductance	Analytical Method: SM 2510							
Specific Conductance	**160000**	umhos/cm	1.0	1		10/31/17 11:20		E
Specific Gravity	Analytical Method: ASTM D5057							
Specific Gravity	**1.21**			1		10/27/17 11:15		
300.0 IC Anions	Analytical Method: EPA 300.0							
Chloride	**174000**	mg/L	2400	2000		10/30/17 17:17	16887-00-6	
Sulfate	**231**	mg/L	120	100		10/30/17 13:28	14808-79-8	

REPORT OF LABORATORY ANALYSIS

Howie 1 SWD
Pad Layout



I, Eric Hearon, Professional Land Surveyor, N.D. No. 9654, do hereby certify that the survey plat shown hereon was made by me, or under my direction, from notes made in the field, and the same is true and correct to the best of my knowledge and belief.

REGISTERED PROFESSIONAL LAND SURVEYOR
ERIC L. HEARON
LS-9654
DATE 10-23-17
NORTH DAKOTA

Computed & Drawn By	Surveyed By	Approved By	Scale	Date
Zach Baranick	M.A. Krebs	E. Hearon	1" = 80'	9/30/2017
Field Book	**Material**	**Revised**	**Project No.**	**Drawing No.**
OW-357	Pad Layout	-	3717337	4

Oct 16, 2017 - 8:08 AM - P:\Oil\Stawson\3717337\CADD\3717337BAS02.dwg

KLJ

ATTACHMENT M-1

ATTACHMENT M-2

SLAWSON exploration company, inc.

WELLBORE DIAGRAM
Howie 1 SWD

GL ELEVATION = 2047'
KB ELEVATION = 2051'
API# TBD

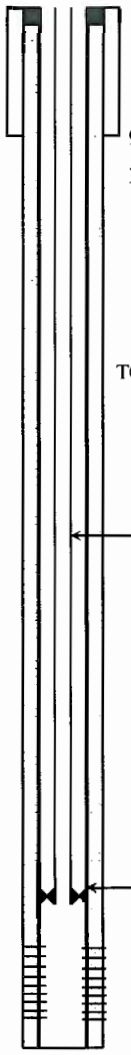
NWSW SEC 21 T151 R92
2465' FSL and 650' FWL
Mountrail County, North Dakota

USDW Surface-1713' < 10,000 TDS
Coleharbor-Fox Hills

Formation	TVD KB
Coleharbor Grop	0-23'
Bullion Creek	23'
Cannon Ball	558'
Hell Creek	1,043'
Fox Hills	1,515'
Pierre	1,758'
Niobrara	3,587'
Carlile	3,940'
Greenhorn	4,185'
Belle Fourche	4,348'
Mowry	4,569'
Inyan Kara (Dakota)	4,910'
Swift	5,310'
TD	5,460'

Mowry Upper confining zone 4,488'
To be confirmed with logs

Swift Lower confining zone 5,261'
To be confirmed with logs



9-5/8" 36# J-55 STC @ 1,863'
BHT 85 F ASSUMED

TOC 7" @ Surface (plan)

3-1/2" 9.3# J55 EUE w/ Internal Plastic Coating TK 70

Est Injection Packer @ +/_ 4770'

Inyan Kara Perforations from 4,845' to 5,261' gross,
Confirmed interval after logging

PBTD @ 5,374'
7" 23# @ 5,460'
BHT 125-130 F ASSUMED

NOTE: NOT TO SCALE

String	Hole Size	Casing Size	Interval/Depth	CUFT	Yield	SXS	TOC
Surface Lead Set 'C'	13-1/2"	9-5/8"	0-1363'	1010	2.66	360	Surface
Surface Tail 500' G	60% Xcess		1363-1863'	414	1.15	360	1363'
Production Lead 'Lite'	8-3/4"	7"	0-4410'	801	2.05	405	Surface
Production Tail 810' G	20% Xcess		4410-5460'	190	1.15	140	4600'

Howie 1 SWD Security Plan

Slawson Exploration Company, Inc. will install and maintain in continuous working order a "one month" pressure recording chart downstream of the discharge pump, where it will continuously measure the injection pressure. The chart will be changed monthly and the charts retained for possible reference for a minimum of 5 years.

Signage-The facility will have signage indicating that the property is private and no trespassing is allowed. Signs will be posted at the entrance from public roads.

Gates and Fences-The perimeter of the site will be fenced with 6-foot high chain link fence. The gate will be kept locked, only authorized personnel and one commercial trucking company will be allowed access to the facility.

Surveillance-The site will be monitored by 24-hour camera surveillance.

Manifest System

Fluid disposed-Each driver that is authorized to unload at the disposal site will provide a brine run ticket that will provide the name(s) addresses and telephone numbers of the brine generator (producer), transporter, and disposal facility operator, the date and time the brine was collected, hauled and unloaded at the facility, and the volume of brine hauled. A copy will be left at the lease of the brine generator (producer) as well as at the disposal site. The brine run ticket will track the daily and monthly volumes injected.

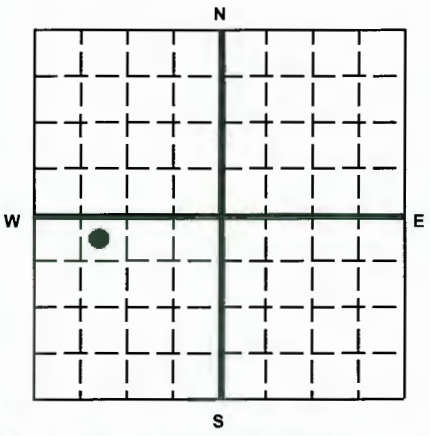
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility	Name and Address of Owner/Operator
Slawson Exploration Co. Inc 1675 Broadway, Ste 1600, Denver, CO 80202	same

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
North Dakota	Mountrail	

Surface Location Description

1/4 of ___ 1/4 of nw 1/4 of sw 1/4 of Section 21 Township 151 Range 92

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location ___ ft. frm (N/S) S Line of quarter section and ___ ft. from (E/W) W Line of quarter section.

TYPE OF AUTHORIZATION

- [x] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

Lease Name Howie

WELL ACTIVITY

- [ ] CLASS I
- [x] CLASS II
  - [x] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Well Number 1 SWD

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
9 5/8"	36	1863	1863	13 1/2"
7"	23	5460	5460	8 3/4"

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- [x] The Balance Method
- [ ] The Dump Bailer Method
- [ ] The Two-Plug Method
- [ ] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche	7	7	7				
Depth to Bottom of Tubing or Drill Pipe (ft	5261	1963	200				
Sacks of Cement To Be Used (each plug)	105	40	40				
Slurry Volume To Be Pumped (cu. ft.)	115	46	46				
Calculated Top of Plug (ft.)	4720	1763	0				
Measured Top of Plug (if tagged ft.)							
Slurry Wt. (Lb./Gal.)	15.8	15.8	15.8				
Type Cement or Other Material (Class III)	class G	class G	class G				

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
4845'	5261'		

Estimated Cost to Plug Wells

$75,000

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Eric Sundberg, V.P. Regulatory Affairs		01/29/2018

EPA Form 7520-14 (Rev. 12-08)

ATTACHMENT Q-2

SLAWSON exploration company, inc.

WELLBORE DIAGRAM
Howie 1 SWD
PROPOSED P&A

GL ELEVATION = 2047' EST
KB ELEVATION = 2051' EST
API# TBD

NWNW SEC 21 T151 R92
2465' FSL and 650' FWL
Mountrail County, North Dakota

USDW Surface-1713' < 10,000 TDS

Coleharbor-Fox Hills

Formation	TVD
Coleharbor Group	0-23'
Bullion Creek	23'
Cannonball	558'
Hell Creek	1,043'
Fox Hills	1,515'
Pierre	1,758'
Niobrara	3,587'
Carlile	3,940'
Greenhorn	4,185'
Belle Fourche	4,348'
Mowry	4,569'
Inyan Kara (Dakota)	4,910'
Swift	5,310'
TD	5,460'

Mowry Upper confining zone 4,488'

Swift Lower confining zone 5,261'

PLUG #3 Spot 40 SXS CLASS G 0-200'

9-5/8" 36# J-55 STC @ 1,863'

BHT 85 F ASSUMED

PLUG #2 Spot 40 SXS CLASS G 1,763-1,963'

WOC & Tag w/ TBG

TOC 7" @ Surface (plan)

9.2 PPG BRINE BETWEEN PLUGS

Final plugging intervals to be determined by final well design after logging

PLUG #1 105 SXS CLASS G below PKR & 10 SXS on top 4,720-5,261' Total 115 SXS

Injection Packer @ +/_ 4770' used as cement retainer

Inyan Kara Perforations from 4,845' to 5,261' gross

PBTD @ 5,374'

7" 23# @ 5,460'

BHT 125-130 F ASSUMED

NOTE: NOT TO SCALE

String	Hole Size	Casing Size	Interval/Depth	CUFT	Yield	SXS	TOC
Surface Lead Set 'C'	13-1/2"	9-5/8"	0-1363'	1010	2.66	360	Surface
Surface Tail 500' G	60% Xcess		1363-1863'	414	1.15	360	1363'
Production Lead 'Lite'	8-3/4"	7"	0-4410'	801	2.05	405	Surface
Production Tail 810' G	20% Xcess		4410-5460'	190	1.15	140	4600'

ATTACHMENT Q-3

SLAWSON exploration company, inc.

HOWIE 1 SWD
Proposed P&A Procedure

Casing Program: **Surface Casing:**
9 5/8'' 36# J55 ST&C casing to 1,863'+.
Production Casing:
7" 23# N80 @ 5,460' drifted to 6 1/8"
Production Tubing:
3 ½" 9.3# J55 EUE Internal Plastic Coated w/ 7" Nickel Plated Packer

Special Instructions:
ALWAYS stay on established lease roads.
No H2S Safety Equipment Required

P&A Procedure:

1. Move in P&A Rig.
2. Check well for pressure and set 3½" downhole blanking plug w/ bypass in nipple for pressure containment as necessary.
3. Nipple up BOPE.
4. Release from packer at +/- 4770' at on/off tool. TOOH and lay down 3 ½" 9.3# J55 tubing.
5. Pick up 2 7/8" work string w/ on/off tool and connect at on/off tool to packer BHA.
6. Pressure test annulus to 1000 PSI. Establish injection rate and pressure.
7. Plug #1. Mix and pump 115 sacks Class G. Squeeze perforations with 105 sacks below packer and spot 10 sacks on top. TOC at ~4720' calculated.
8. Pull up 5 Stands and reverse tubing clean.
9. Role hole with 9.2 PPG inhibited brine to surface. TOOH.
10. Plug #2. Mix and spot 40 sacks Class G cement (2% Calcium Chloride optional) from 1763' to 1963'. WOC and tag with tubing. Record top plug depth.
11. TOOH and lay down tubing to 200'. Strip off BOPE.
12. Plug #3. Mix and spot 40 sacks Class G (2% Calcium Chloride optional) from 200' to surface. WOC.
13. Cut off well head 3' below ground level.
14. Weld on plate w/ weep hole and the following information:
Slawson, Howie 1 SWD, NWSW Sec 21-T151N-R92W.

ATTACHMENT R-1

Bond No. B009507

SURETY RIDER NO. 2

To be attached to and form a part of Bond No. B009507 on behalf of Slawson Exploration Company, Inc. as Principal, executed by U.S. Specialty Insurance Company as Surety, for the benefit of the U.S. Environmental Protection Agency, as Obligee.

Executed date of bond: August 24, 2015
Effective date of change: January 19, 2018

In consideration of the mutual agreement contained herein, the Principal and the Surety hereby consent to the following changes:

The penalty amount has increased from:

One Hundred Fifty Thousand and No/100 Dollars ($150,000.00)

to:

Two Hundred Twenty-Five Thousand and No/100 Dollars ($225,000.00)

The following well has been added:

Howie 1 SWD
Sec 21 – T151N – R92W
Mountrail County, ND

Nothing contained herein shall vary, alter or extend any provision, term or condition of this bond except as expressly stated herein.

SIGNED, SEALED AND DATED THIS: 24th day of January, 2018.

Slawson Exploration Company, Inc.	U.S. Specialty Insurance Company
Name of Principal	Name of Surety
Kathy A Atkins	Meredith K Anderson
Signature	Signature
Kathy A. Atkins, Vice President	Meredith K. Anderson, Attorney-in-Fact
Name and title of person signing on behalf of Principal	Name and title of person signing on behalf of Surety

ATTACHMENT R-2

POWER OF ATTORNEY

AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY

KNOW ALL MEN BY THESE PRESENTS: That American Contractors Indemnity Company, a California corporation, Texas Bonding Company, an assumed name of American Contractors Indemnity Company, United States Surety Company, a Maryland corporation and U.S. Specialty Insurance Company, a Texas corporation (collectively, the "Companies"), do by these presents make, constitute and appoint:

Edwin H. Frank, III, Michele K. Tyson, W. Russell Brown, Jr. or Meredith K. Anderson of Houston, Texas

its true and lawful Attorney(s)-in-fact, each in their separate capacity if more than one is named above, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver **any and all bonds, recognizances, undertakings or other instruments or contracts of suretyship to include riders, amendments, and consents of surety, providing the bond penalty does not exceed _____ Three Million _____ Dollars ($ **3,000,000.00**).** This Power of Attorney shall expire without further action on November 3, 2019. This Power of Attorney is granted under and by authority of the following resolutions adopted by the Boards of Directors of the Companies:

Be it Resolved, that the President, any Vice-President, any Assistant Vice-President, any Secretary or any Assistant Secretary shall be and is hereby vested with full power and authority to appoint any one or more suitable persons as Attorney(s)-in-Fact to represent and act for and on behalf of the Company subject to the following provisions:

Attorney-in-Fact may be given full power and authority for and in the name of and on behalf of the Company, to execute, acknowledge and deliver, any and all bonds, recognizances, contracts, agreements or indemnity and other conditional or obligatory undertakings, including any and all consents for the release of retained percentages and/or final estimates on engineering and construction contracts, and any and all notices and documents canceling or terminating the Company's liability thereunder, and any such instruments so executed by any such Attorney-in-Fact shall be binding upon the Company as if signed by the President and sealed and effected by the Corporate Secretary.

Be it Resolved, that the signature of any authorized officer and seal of the Company heretofore or hereafter affixed to any power of attorney or any certificate relating thereto by facsimile, and any power of attorney or certificate bearing facsimile signature or facsimile seal shall be valid and binding upon the Company with respect to any bond or undertaking to which it is attached.

IN WITNESS WHEREOF, The Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this January 24, 2018

AMERICAN CONTRACTORS INDEMNITY COMPANY TEXAS BONDING COMPANY
UNITED STATES SURETY COMPANY U.S. SPECIALTY INSURANCE COMPANY

Corporate Seals

By: _____
Daniel P. Aguilar, Vice President

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of Los Angeles SS:

On this 1st day of November, 2016, before me, Sabina Morgenstein, a notary public, personally appeared Daniel P. Aguilar, Vice President of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his authorized capacity, and that by his signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal.

Signature _____ (Seal)

SABINA MORGENSTEIN
Commission # 2129256
Notary Public - California
Los Angeles County
My Comm. Expires Nov 3, 2019

I, Kio Lo , Assistant Secretary of American Contractors Indemnity Company, Texas Bonding Company, United States Surety Company and U.S. Specialty Insurance Company, do hereby certify that the above and foregoing is a true and correct copy of a Power of Attorney, executed by said Companies, which is still in full force and effect; furthermore, the resolutions of the Boards of Directors, set out in the Power of Attorney are in full force and effect.

In Witness Whereof, I have hereunto set my hand and affixed the seals of said Companies at Los Angeles, California this 24th day of January, 2018

Corporate Seals

Bond No. B009507
Agency No. 8353

_____
Kio Lo, Assistant Secretary