

Surface Soil Sampling Report

01-18-017-18 W4M

December 2008

Commissioned for:

Husky Oil Operations Ltd.

707-8th Ave. S.W.

Box 6525, Station "D"

Calgary, AB T2P 3G7

Attention: Ms. Sonia Glubish, B.Sc., A.Ag.

Distribution: (2 hard copies to Husky Oil Operations Ltd)

Prepared by:

North Shore Environmental Consultants Inc.

#127, 11929 – 40 Street SE

Calgary, Alberta, T2Z 4M8



EXECUTIVE SUMMARY

Introduction

Husky Oil Operations Ltd. (Husky) retained North Shore Environmental Consultants Inc. (North Shore) to complete additional surface soil sampling, ditch modification and culvert installation in response to landowner concerns regarding runoff water from the Husky 01-18-07-18 W4M Armada Gas Plant onto his field located directly east of the plant across range road 18-5.

The landowner raised concerns with pesticide application on the plant site and the possibility that the runoff water had carried the pesticides into his field causing discolouration and sparse growth.

Background

On June 13, 2008, North Shore collected five discrete soil samples from within the area of concern and three control samples located outside of the area of concern. In July 2008, North Shore completed a letter report summarizing the June 13, 2008 sampling and site visit.

In response to the findings of North Shore's July 2008 soil sampling and site visit report, North Shore completed additional soil sampling. On October 23rd, 2008, ten additional soil samples from the area of concern and 6 additional control soil samples were collected. The samples were then submitted for analyses that included herbicides, Glyphosate/AMPA and detailed salinity.

North Shore also modified the ditch and installed a culvert along the east boundary of the Armada plant in October to control surface water runoff from the plant.

Results

Laboratory results from both the June and October sampling events reported that six samples from the area of concern (Points 5, 6, 7, 8, 9 and 11) and one control sample (Control 2) reported Glyphosate concentrations that exceed Tier 1 Guidelines. Two samples from the area of concern (Point 5 and Point 11) reported EC values rated 'poor' according to AENV 2001 Guidelines. One sample from the area of concern (Point 3) reported a MCPA concentration that exceeds Tier 1 Guidelines.

Detectable concentrations of AMPA, 2,4-D d5 and Treflan d14 were found in all of the samples analysed, however there are currently no AENV guidelines for these products.

Conclusion

Salinity and MCPA concentrations were reported above criteria in the area of concern. Glyphosate concentrations, AMPA, 2,4-D d5 and Treflan d14 were reported within the area of concern and within the control area. On October 24, 2008, North Shore supervised the construction of a gravel swale and installation of a culvert in the ditch along the east side of the Husky Armada gas plant. This will ensure that runoff water will now be contained to the ditch along the east side of the plant and will flow down the swale from north to south, through the culvert beneath the approach to the plant site.

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1.0 INTRODUCTION

Husky Oil Operations Ltd. (Husky) retained North Shore Environmental Consultants Inc. (North Shore) to complete additional surface soil sampling, ditch modification and culvert installation in response to landowner concerns regarding runoff water from the Husky 01-18-07-18 W4M Armada Gas Plant onto his field located directly east of the plant across range road 18-5.

The landowner raised concerns with pesticide application on the plant site and the possibility that the runoff water had carried the pesticides into his field causing discolouration and sparse growth.

North Shore's role was to provide technical support to Husky and authorization to proceed with this project was provided by Ms. Sonia Glubish.

2.0 BACKGROUND INFORMATION

2.1 Physical Setting

The area of concern is located in an agricultural area (white zone) in the far southwest corner of LSD 04-17-017-18 W4M adjacent to Range Road 18-5 and Secondary Highway 539. The Husky 1-18 gas plant is located approximately 30 m west across Range Road 18-5 from the area of concern. The terrain in the surrounding area is gently sloping with the area of concern draining to the south. Soil conditions on the site are primarily silt loam topsoil.

2.2 Previous Soil Sampling Event

On June 13, 2008, North Shore collected five discrete soil samples from within the area of concern and three control samples located outside of the area of concern.

North Shore observed standing water, stressed vegetation (yellowish brown discoloured wheat) and sparse growth in the area of concern. Standing water was also observed along the east boundary of the Husky plant in the west ditch of range road 18-5. Erosion rills were observed on range road 18-5 between the west and east ditches.

The area of concern measures approximately 155 m long and 15 m wide running north-south along the east side of 18-5 and approximately 160 m long and 15 m wide along the north side of highway 539.

For detailed findings of the June 13, 2008 soil sampling, please refer to the July 2008 letter report attached as Appendix C.

3.0 METHODS

3.1 Safe Work Procedures

North Shore personnel adhered to Husky's policies and procedures throughout the project. Standard oilfield personal protective equipment, which consisted of hard hat, steel-toed boots, safety glasses, 4 way personal gas monitor and fire retardant coveralls were worn by all on-site personnel. Prior to entry onto the site, all personnel were required to present proof of applicable safety certification (Husky Orientation, Ground Disturbance Level II, H₂S Alive, Transportation of Dangerous Goods, Workplace Hazardous Material Information System and Standard Level First Aid). A Husky Work Authorization Permit was issued, a North Shore Safe Work Sheet was completed, and a tailgate safety meeting was conducted prior to commencing any work.

3.2 Field Screening Methodology

Soil samples were field screened for electrical conductivity (EC) to estimate salinity levels. Twenty millilitres of deionised water was added to a 50ml graduated cylinder. The soil sample material was added to the cylinder until the water level reached 30ml, this created a 2:1 water to soil ratio. The cap was placed on the cylinder and shaken vigorously for 60 seconds. The cylinder was let to stand upright for approximately 5 minutes and then shaken vigorously for 60 seconds. The cylinder was then let to stand for 2 minutes to allow the soil particles to settle out of the solution. The Field Scout EC probe was turned on and calibrated. The probe was rinsed with deionised water and then placed into the solution to obtain the reading. The probe was rinsed with deionised water between each sample to prevent cross-contamination. The field EC measurements are presented in Table 2.

3.3 Sample Collection Methods

North Shore conducted all sample collection for this project. North Shore personnel wore a new pair of clean, chemical resistant nitrile gloves for each soil sample collected. All soil samples were placed in sealable plastic bags for inorganic analyses. All collected samples were labelled and placed in coolers with ice or ice packs to maintain a temperature as close to 4°C as possible. All soil samples were transported to ALS Laboratory Group (ALS) Laboratories Inc. in Calgary, Alberta. Standard chain of custody protocols were followed during the transport of the samples. Select soil samples were submitted for herbicides, Glyphosate/AMPA and detailed salinity analyses.

3.4 Ditch Modification and Culvert Installation

On October 24, 2008, North Shore supervised the construction of a gravel swale and installation of a culvert in the ditch along the east side of the Husky Armada gas plant. Top Gun Well Services (Top Gun) of Brooks, Alberta supplied the equipment and labour to install the gravel swale and culvert. The gravel swale and culvert will prevent surface water runoff from the Armada plant from flowing over the road and east into the cultivated field (area of concern). Runoff water will now be contained to the ditch along the east side of the plant and will flow down the swale from north to south, through the culvert beneath the approach to the plant site.

4.0 REGULATORY CRITERIA

Laboratory results report the natural soil conditions in the area are fine-grained; therefore the fine-grained soil criteria for agricultural area land use, all exposure pathways was applied (AENV, 2007). Laboratory results were compared to the following criteria:

- Soil pH, Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) and petroleum hydrocarbon (PHC) fractions (F1, F2, F3 and F4) results were compared to the AENV document “Alberta Tier 1 Soil and Groundwater Remediation Guidelines” for fine textured soils under agricultural area land use for all exposure pathways (Tier 1 Guidelines; AENV, 2007).
- Salinity values were compared to the AENV document “Salt Contamination Assessment and Remediation Guidelines” (SCAR Guidelines; AENV, 2001) as per Tier 1 Guidelines.

5.0 SAMPLE COLLECTION

On October 23rd, 2008, ten additional soil samples were collected from the area of concern and 6 additional control soil samples were collected from the cultivated field outside of the area of concern in areas that represent background soil conditions. All samples were submitted to ALS in Calgary, Alberta.

Select samples were analyzed for herbicides, Glyphosate/AMPA and detailed salinity parameters.

6.0 LABORATORY RESULTS

Laboratory analytical results are summarized in Table 1 and laboratory certificates of analyses are attached as Appendix B. For reasons of clarity, soil sampling results from the June 13, 2008 sampling event have been included in Table 1 and will be discussed in this report as additional analytical was requested on some of the samples after the July 2008 letter report was issued.

Laboratory results reported that six samples from the area of concern (Points 5, 6, 7, 8, 9 and 11) and one control sample (Control 2) have Glyphosate concentrations that exceed

Tier 1 Guidelines. Two samples from the area of concern (Point 5 and Point 11) have EC values rated 'poor' according to AENV 2001 Guidelines. One sample from the area of concern (Point 3) has a MCPA concentration that exceeds Tier 1 Guidelines.

Detectable concentrations of AMPA, 2,4-D d5 and Treflan d14 were found in all of the samples analysed, however there are currently no AENV guidelines for these products.

7.0 CONCLUSIONS

On October 23rd, 2008, North Shore collected ten additional soil samples from the area of concern and 6 additional control soil samples. The samples were then submitted to ALS in Calgary, Alberta for analyses that included herbicides, Glyphosate/AMPA and detailed salinity.

Laboratory results reported that six samples from the area of concern (Points 5, 6, 7, 8, 9 and 11) and one control sample (Control 2) have Glyphosate concentrations that exceed Tier 1 Guidelines. Two samples from the area of concern (Point 5 and Point 11) have EC values rated 'poor' according to AENV 2001 Guidelines. One sample from the area of concern (Point 3) has a MCPA concentration that exceeds Tier 1 Guidelines.

Detectable concentrations of AMPA, 2,4-D d5 and Treflan d14 were found in all of the samples analysed, however there are currently no AENV guidelines for these products.

On October 24, 2008, North Shore supervised the construction of a gravel swale and installation of a culvert in the ditch along the east side of the Husky Armada gas plant. Runoff water will now be contained to the ditch along the east side of the plant and will flow down the swale from north to south, through the culvert beneath the approach to the plant site.

8.0 DISCLOSURE

North Shore Environmental Consultants Inc. (North Shore) has prepared this report taking into account government regulations available at the time of the assessment. North Shore has not made an independent verification of historical or analytical results provided by third parties and where indicated or implied the conclusions are based on

visual observation and or analytical testing conducted at the time of the assessment. The conclusions do not apply to any areas of the site not investigated.

This report is intended for the exclusive use of the company, organization, or individual to whom it is addressed. It may be relied upon by Alberta Environment. The investigation and reporting has been conducted with a reasonable level of attention and skill, in accordance with standards prevailing in the environmental consulting profession at the time of report date.

Any use which a third party makes of this report, or any reliance on or decisions to be made base on it, are the responsibility of such third parties. North Shore Environmental Consultants Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

9.0 CLOSURE

North Shore appreciated the opportunity to work on this project and if we can provide clarification of any part of this report, please do not hesitate to contact the undersigned at (403) 228-3095.

This report was prepared by:



Ryan Cox, C.Tech., A.T.T.
North Shore Environmental Consultants Inc.

Reviewed By:



Kelly Zadko, B.Sc., P.Ag.
North Shore Environmental Consultants Inc.

10.0 REFERENCES

Alberta Environment. 2001. Soil Quality Guidelines for Unrestricted Land Use from 'Salt Contamination Assessment and Remediation Guidelines'. Environment Sciences Division. Edmonton, Alberta, Publication No. T/606. May 2001.

Alberta Environment. 2007. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. Environmental Policy Branch. Environmental Assurance Division. Edmonton, Alberta. June 2007. <http://environment.gov.ab.ca/info/library/7751.pdf>

TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
01-18-017-18 W4M
SURFACE SOIL SAMPLING
HUSKY ENERGY

Parameters	Units	Control Soil Samples (0.0 - 0.15 m)							Area of Concern Soil Samples (0.0 - 0.15 m)								Guidelines ¹		
		13-Jun-08			23-Oct-08				13-Jun-08		23-Oct-08								
		Control 1	Control 2	Control 3	Control 4	Control 6	Control 7	Control 9	Point 3	Point 5	Point 6	Point 7	Point 8	Point 9	Point 11	Point 14	Criteria	Year	Value
Hydrocarbon Analyses																			
Benzene	mg/kg								<0.005	<0.005							AENV	2007	0.046
Toluene	mg/kg								<0.01	<0.01							AENV	2007	0.52
Ethylbenzene	mg/kg								<0.01	<0.01							AENV	2007	0.11
Total Xylenes (o, m & p)	mg/kg								<0.01	<0.01							AENV	2007	15
F1 (C ₆ to C ₁₀)(-BTEX) ²	mg/kg								<5	<5							AENV	2007	210
F2 (C ₁₁ to C ₁₆)	mg/kg								<5	<5							AENV	2007	150
F3 (C ₁₇ to C ₃₄)	mg/kg								100	75							AENV	2007	1300
F4 (>C34) ³	mg/kg								57	40							AENV	2007	5600
Soil Moisture	%								26	19							NC	NC	NC
Chromatogram Interpretation⁴									Indistinguishable	Indistinguishable							NC	NC	NC
Routine																			
pH	pH-unit	7.00	6.88	7.35				7.29	7.24	7.64		7.90		7.70	7.62		AENV	2007	6 - 8.5
Electrical Conductivity (EC)	dS/m	3.04	1.62	0.63				0.78	1.01	6.71		3.57		3.30	4.23		AENV	2001	2-4
Sodium Adsorption Ratio (SAR)	Ratio	1.18	1.62	1.04				0.56	1.41	8.19		2.25		2.06	3.41		AENV	2001	<4
Saturation	%	50.0	50.7	53.3				48.0	44.7	58.0		40.0		49.3	54.7		NC	NC	NC
Soluble Salts																			
Calcium (Ca)	mg/L	485	195	57.7				103	116	416		529		538	462		NC	NC	NC
Magnesium (Mg)	mg/L	96.9	48.6	11.1				22.3	24.0	350		170		117	223		NC	NC	NC
Sodium (Na)	mg/L	109	97.8	33.0				24.0	63.9	937		233		202	357		NC	NC	NC
Potassium (K)	mg/L	41.5	41.5	32.7				36.7	36.6	55.2		28.1		114	135		NC	NC	NC
Sulphate (SO ₄)	mg/L	1420	804	50				89	297	4170		1920		1700	2530		NC	NC	NC
Chloride (Cl)	mg/L	20	<20	<20				50	<20	70		100		90	90		NC	NC	NC
Pesticides																			
Glyphosate	mg/kg		0.11		0.031	0.026	0.027	0.023	<0.005	0.52	3.2	3.0	2.6	0.094	0.10	0.032	AENV	2007	0.054
AMPA	mg/kg		0.22		0.14	0.067	0.096	0.079	0.090	0.21	3.5	2.6	3.6	0.15	0.13	0.045	NC	NC	NC
Sterilants																			
Atrazine	mg/kg		<0.0005						<0.0005	<0.0005							AENV	2007	0.0088
Bromacil	mg/kg		<0.0005						<0.0005	<0.0005							NC	NC	NC
Diuron	mg/kg		0.0026						0.00735	0.0084							AENV	2007	1.9
DCPMU	mg/kg		<0.0005						0.0141	0.016							NC	NC	NC
Simazine	mg/kg		<0.0005						<0.0005	<0.0005							AENV	2007	0.033
Tebuthiuron	mg/kg		<0.0005						<0.0005	<0.0005							AENV	2007	0.12
Herbicides																			
2,4-D d5	mg/kg		129		106	89	93	110	93	119	96	94	82	123	90	107	NC	NC	NC
Treflan d14	mg/kg		95		61	49	68	59	98	121	53	53	45	68	49	64	NC	NC	NC
Clopyralid	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NC	NC	NC
Dicamba	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	0.033	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	AENV	2007	0.12
Mecoprop	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NC	NC	NC
MCPA	mg/kg		<0.005		<0.005	<0.005	<0.005	0.005	0.021	0.011	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	AENV	2007	0.02
2,4-D	mg/kg		<0.005		0.006	<0.005	<0.005	<0.005	<0.005	0.018	0.011	0.009	0.010	<0.005	<0.005	<0.005	AENV	2007	0.1
Bromoxynil	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	AENV	2007	0.044
Trifluralin	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	AENV	2007	0.038
Triclopyr	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NC	NC	NC
Triallate	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.007	0.005	<0.005	<0.005	<0.005	AENV	2007	0.0077
2,4,5-T	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NC	NC	NC
Picloram	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	AENV	2007	0.024
Fluazifop-p-butyl	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	NC	NC	NC
Diclofop-methyl	mg/kg		<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	AENV	2007	0.059
Soil Nutrients																			
Available Nitrate-N	mg/kg		1.8						1.8	10.2							NC	NC	NC
Available Phosphate-P	mg/kg		28						57	31							NC	NC	NC
Available Potassium	mg/kg		535						462	408							NC	NC	NC
Available Sulfate-S	mg/kg		113						33	1150							NC	NC	NC
Particle Size Analysis																			
Fine <75µ	%	65	65						65	64							NC	NC	NC
Coarse >75µ	%	35	35						35	36							NC	NC	NC
Texture		Fine	Fine						Fine	Fine							NC	NC	NC

Notes:
¹ Alberta Environment. 2001. Salt Contamination Assessment and Remediation Guidelines. These guidelines are for topsoil (A horizons on the control area) where soil quality has been rated as 'fair' for EC and 'good' for SAR.
Alberta Environment. 2007. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. These standards are for fine textured surface soil under agricultural land use for all exposure pathways.
² Fraction 1 petroleum hydrocarbons (C6-C10) minus benzene, toluene, ethylbenzene and xylene concentrations.
³ Fraction 4 petroleum hydrocarbons (C34-C50 or >C34) as determined by high temperature gas chromatography.
⁴ Interpreted by North Shore unless otherwise indicated.

NC - No Criteria Established

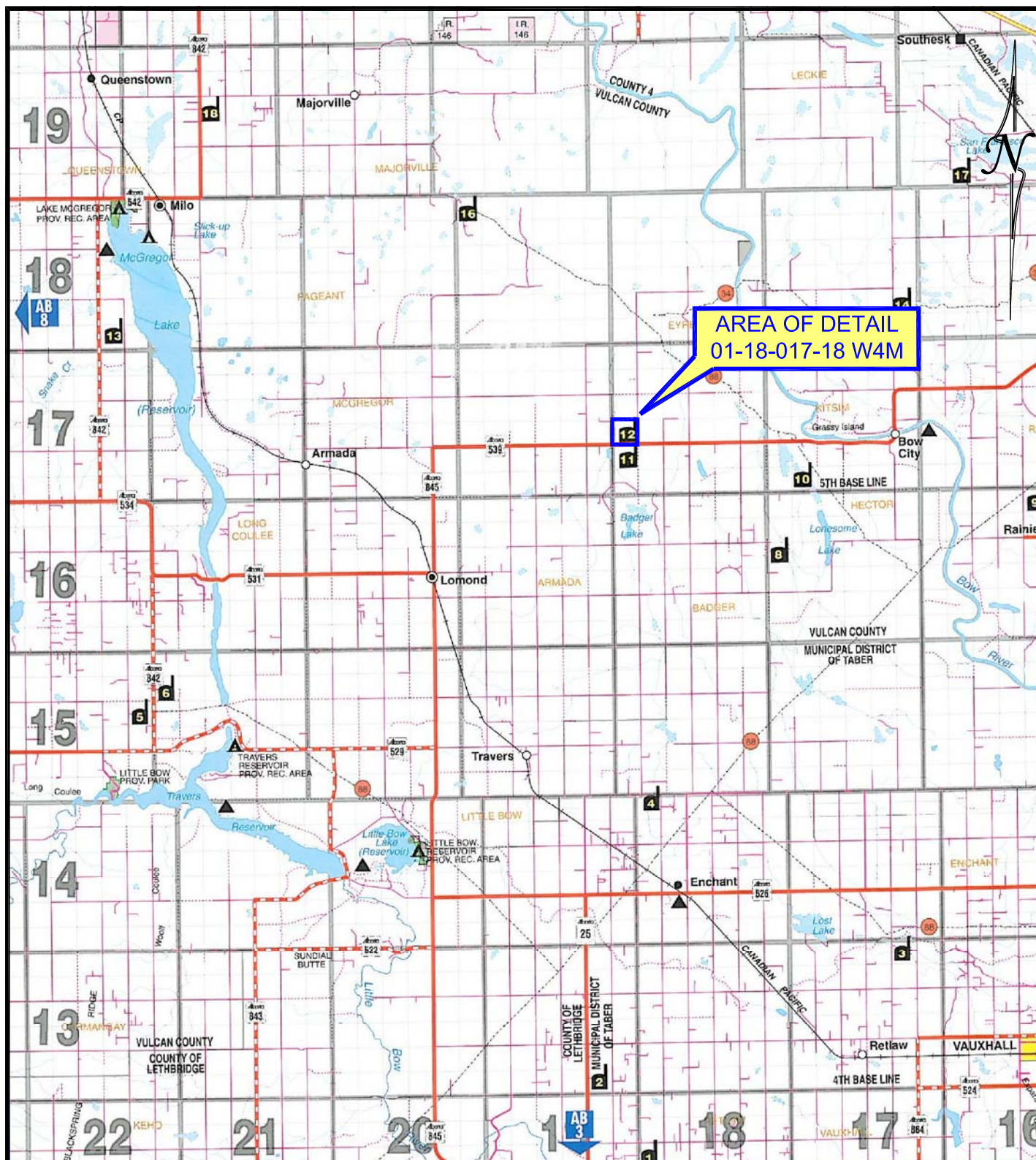
Bold - Greater than applicable guidelines.

blank - not analysed

Table 2
Summary of Electrical Conductivity Field Screening Results
01-18-017-18 W4M
October 23, 2008
Husky Energy

Sample	Field EC (mS)
Control 4	0.12
Control 5	0.02
Control 6	0.49
Control 7	0.10
Control 8	0.11
Control 9	0.28
Point 6	0.74
Point 7	0.95
Point 8	0.20
Point 9	0.81
Point 10	0.14
Point 11	0.16
Point 12	2.83
Point 13	1.34
Point 14	1.96
Point 15	0.29
Point 16	0.20

FIGURES



0 5 10 15
SCALE IN KILOMETERS



#143, 201 Kaska Road
Sherwood Park, AB
T8A 2J6

HUSKY ENERGY

01-18-017-18 W4M

KEY MAP

Date:	July 2008	Drawn By:	JV	Checked by:	RC	Figure:	1 OF 2
North Shore File #:	E0003355	Scale:	1:350 000	Revision #:	00		

BASE MAP DERIVED FROM CANADIAN OIL ATLAS



AREA OF CONCERN

0 50 100 200
SCALE IN METERS

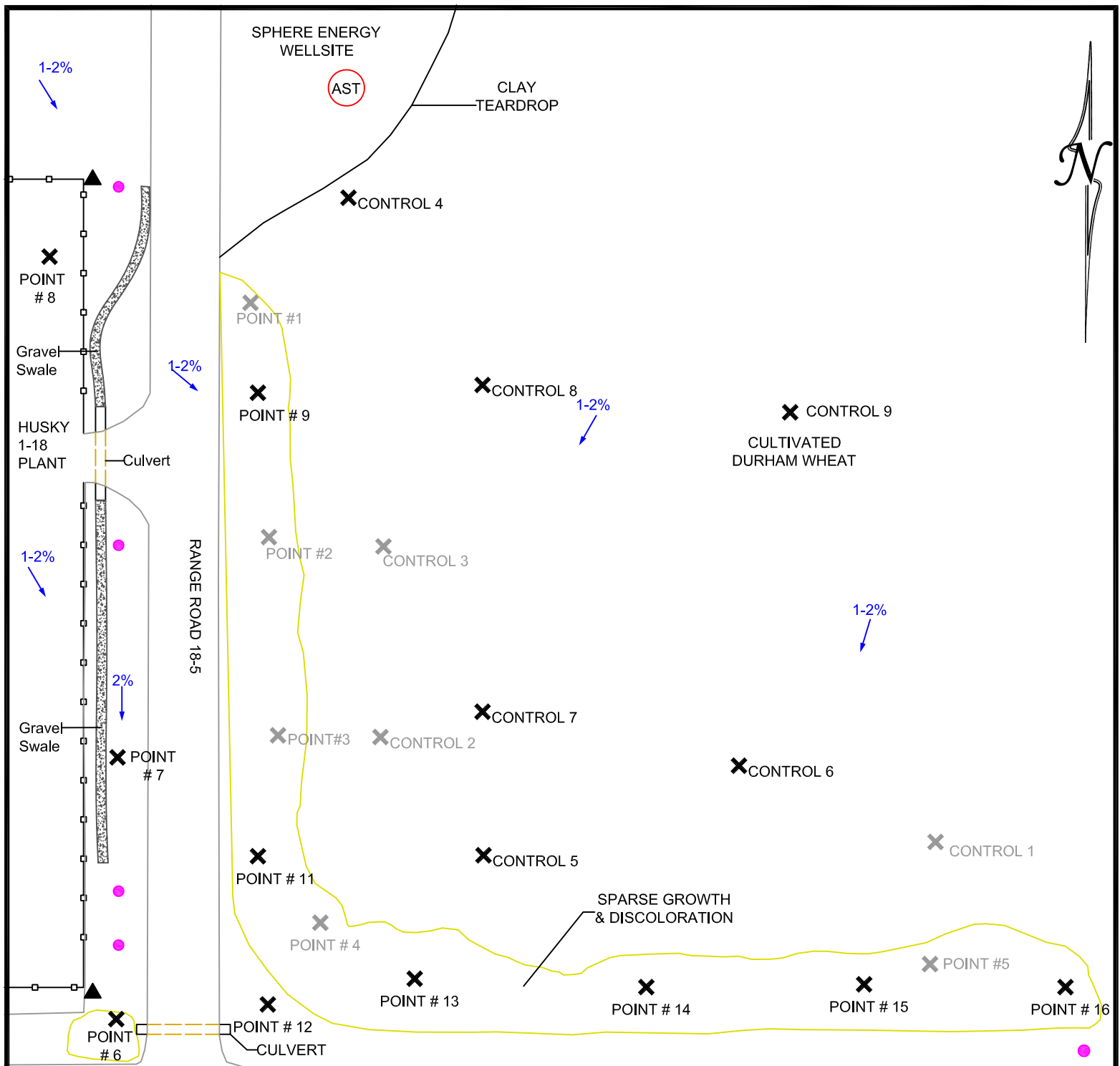


NORTH SHORE
Environmental Consultants
#143, 201 Kaska Road
Sherwood Park, AB
T8A 2J6

HUSKY ENERGY

01-18-017-18 W4M
AERIAL PHOTO AS#5008- 1999

Date: JULY 2008	Drawn By: JV	Checked by: RC	Figure: 2 OF 3
North Shore Job #: E0003355	Scale: 1:5000	File Name: 01-18-17-18 W4-Fg2	



LEGEND

- ▲ SURVEY MARKER
- POWER POLE
- FENCE LINE
- × SAMPLE POINTS (June 13, 2008)
- × SAMPLE POINTS (October 23, 2008)
- 1-2% SLOPE DIRECTION

NOTE: SCALE IS APPROXIMATE ±1m

NORTH SHORE
Environmental Consultants

#143, 201 Kaska Road
Sherwood Park, AB
T8A 2J6

HUSKY ENERGY

01-18-017-18 W4M
SITE DIAGRAM OCTOBER 23, 2008

Date:	Drawn By:	Checked by:	Figure:
DEC 2008	JV	RC	3 OF 3
North Shore File #: E0003355	Scale: 1:1000	Revision #: 01	

APPENDIX A
PHOTOGRAPHS



Photo 1:
View of gravel swale and culvert under access to plant, looking south.



Photo 2:
View of gravel swale and culvert under access to plant, looking north.

APPENDIX B
LABORATORY CERTIFICATES OF ANALYSIS



Environmental Division

Certificate of Analysis

NORTH SHORE ENVIRONMENTAL

ATTN: RYAN COX

127, 11929-40TH STREET S.E.

CALGARY AB T2Z 4M8

Reported On: 29-JUL-08 10:14 AM

Revision: 1

Lab Work Order #: **L642291**

Date Received: **13-JUN-08**

Project P.O. #:

Job Reference: HUSKY

Legal Site Desc: 01-18-017-18 W4M

CofC Numbers: 00654, L642291

Other Information:

Comments: ADDITIONAL 15-JUL-08 10:16

VICTORIA BLAIRE ROBICHEAU
Account Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS Canada Ltd. (formerly ETL Chemspec Analytical Ltd.)

Part of the **ALS Laboratory Group**

Bay 2, 1313-44 Ave. N.E., Calgary, AB T2E 6L5

Phone: +1 403 291 9897 Fax: +1 403 291 0298 www.alsglobal.com

A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L642291-3 POINT 3 (0-0.15M)								
Sampled By: R.C. on 13-JUN-08 @ 14:00								
Matrix: SOIL								
CCME BTEX, TVHs and TEHs								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	14-JUN-08	16-JUN-08	JDV	R680754
Toluene	<0.01		0.01	mg/kg	14-JUN-08	16-JUN-08	JDV	R680754
Ethylbenzene	<0.01		0.01	mg/kg	14-JUN-08	16-JUN-08	JDV	R680754
Xylenes	<0.01		0.01	mg/kg	14-JUN-08	16-JUN-08	JDV	R680754
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					14-JUN-08	16-JUN-08	VRP	R680368
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		17-JUN-08		
F1-BTEX	<5		5	mg/kg		17-JUN-08		
F2 (C10-C16)	<5		5	mg/kg		17-JUN-08		
F3 (C16-C34)	100		5	mg/kg		17-JUN-08		
F4 (C34-C50)	57		5	mg/kg		17-JUN-08		
Total Hydrocarbons (C6-C50)	160		5	mg/kg		17-JUN-08		
Chromatogram to baseline at nC50	NO					17-JUN-08		
 % Moisture	 26		 0.1	 %	 14-JUN-08	 15-JUN-08	 LLL	 R680200
Glyphosate/AMPA								
Glyphosate	<0.005		0.005	mg/kg		02-JUL-08	JS1	R688888
AMPA	0.090		0.005	mg/kg		02-JUL-08	JS1	R688888
Herb Screen GC/MS								
Surr: 2,4-D d5	93		25-175	%		23-JUN-08	JS1	R684722
Surr: Treflan d14	98		25-175	%		23-JUN-08	JS1	R684722
Clopyralid	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Dicamba	0.033		0.005	mg/kg		23-JUN-08	JS1	R684722
Mecoprop	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
MCPA	0.021		0.005	mg/kg		23-JUN-08	JS1	R684722
2,4-D	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Bromoxynil	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Trifluralin	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Triclopyr	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Triallate	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
2,4,5-T	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Picloram	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Fluazifop-p-butyl	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Diclofop-methyl	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
MUST PSA % > 75um	35		1	%		16-JUN-08	JH1	R680676
Soil Sterilant Screen								
Tebuthiuron	<0.0005		0.0005	mg/kg		26-JUN-08	TN	R686064
Bromacil	<0.0005		0.0005	mg/kg		26-JUN-08	TN	R686064
Simazine	<0.0005		0.0005	mg/kg		26-JUN-08	TN	R686064
DCPMU	0.0141		0.0005	mg/kg		26-JUN-08	TN	R686064
Atrazine	<0.0005		0.0005	mg/kg		26-JUN-08	TN	R686064
Diuron	0.00735		0.0005	mg/kg		26-JUN-08	TN	R686064
Available N, P, K and S								
Available Nitrate-N	1.8		0.4	mg/kg	19-JUN-08	19-JUN-08	MAK	R682463
Available Phosphate & Potassium								
Available Phosphate-P	57		1	mg/kg	19-JUN-08	19-JUN-08	MAK	R682276
Available Potassium	462		2	mg/kg	19-JUN-08	19-JUN-08	MAK	R682276
Available Sulfate-S	33		2	mg/kg	19-JUN-08	19-JUN-08	DAD	R682328
Detailed Salinity								

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L642291-3 POINT 3 (0-0.15M)								
Sampled By: R.C. on 13-JUN-08 @ 14:00								
Matrix: SOIL								
Detailed Salinity								
Chloride (Cl)	<20		20	mg/L		16-JUN-08	HSC	R680824
SAR								
Calcium (Ca)	116		5.0	mg/L		19-JUN-08	KMCT	R681861
Potassium (K)	36.6		2.0	mg/L		19-JUN-08	KMCT	R681861
Magnesium (Mg)	24.0		3.0	mg/L		19-JUN-08	KMCT	R681861
Sodium (Na)	63.9		2.0	mg/L		19-JUN-08	KMCT	R681861
SAR	1.41		0.10	SAR		19-JUN-08	KMCT	R681861
Sulfur (as SO4)	297		6	mg/L		19-JUN-08	KMCT	R681861
pH and EC (Saturated Paste)								
% Saturation	44.7		0.1	%		16-JUN-08	KC	R680785
pH in Saturated Paste	7.24		0.01	pH		16-JUN-08	KC	R680785
Conductivity Sat. Paste	1.01		0.03	dS m-1		16-JUN-08	KC	R680785
L642291-5 POINT 5 (0-0.15M)								
Sampled By: R.C. on 13-JUN-08 @ 14:00								
Matrix: SOIL								
CCME BTEX, TVHs and TEHs								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	14-JUN-08	16-JUN-08	JDV	R680754
Toluene	<0.01		0.01	mg/kg	14-JUN-08	16-JUN-08	JDV	R680754
Ethylbenzene	<0.01		0.01	mg/kg	14-JUN-08	16-JUN-08	JDV	R680754
Xylenes	<0.01		0.01	mg/kg	14-JUN-08	16-JUN-08	JDV	R680754
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					14-JUN-08	16-JUN-08	VRP	R680368
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		17-JUN-08		
F1-BTEX	<5		5	mg/kg		17-JUN-08		
F2 (C10-C16)	<5		5	mg/kg		17-JUN-08		
F3 (C16-C34)	75		5	mg/kg		17-JUN-08		
F4 (C34-C50)	40		5	mg/kg		17-JUN-08		
Total Hydrocarbons (C6-C50)	120		5	mg/kg		17-JUN-08		
Chromatogram to baseline at nC50	NO					17-JUN-08		
% Moisture	19		0.1	%	14-JUN-08	15-JUN-08	LLL	R680200
Glyphosate/AMPA								
Glyphosate	0.52		0.005	mg/kg		02-JUL-08	JS1	R688888
AMPA	0.21		0.005	mg/kg		02-JUL-08	JS1	R688888
Herb Screen GC/MS								
Surr: 2,4-D d5	119		25-175	%		23-JUN-08	JS1	R684722
Surr: Treflan d14	121		25-175	%		23-JUN-08	JS1	R684722
Clopyralid	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Dicamba	0.008		0.005	mg/kg		23-JUN-08	JS1	R684722
Mecoprop	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
MCPA	0.011		0.005	mg/kg		23-JUN-08	JS1	R684722
2,4-D	0.018		0.005	mg/kg		23-JUN-08	JS1	R684722
Bromoxynil	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Trifluralin	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Triclopyr	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Triallate	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
2,4,5-T	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Picloram	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
Fluazifop-p-butyl	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L642291-5 POINT 5 (0-0.15M)								
Sampled By: R.C. on 13-JUN-08 @ 14:00								
Matrix: SOIL								
Herb Screen GC/MS								
Diclofop-methyl	<0.005		0.005	mg/kg		23-JUN-08	JS1	R684722
MUST PSA % > 75um	36		1	%		16-JUN-08	JH1	R680676
Soil Sterilant Screen								
Tebuthiuron	<0.0005		0.0005	mg/kg		26-JUN-08	TN	R686064
Bromacil	<0.0005		0.0005	mg/kg		26-JUN-08	TN	R686064
Simazine	<0.0005		0.0005	mg/kg		26-JUN-08	TN	R686064
DCPMU	0.016		0.0005	mg/kg		26-JUN-08	TN	R686064
Atrazine	<0.0005		0.0005	mg/kg		26-JUN-08	TN	R686064
Diuron	0.0084		0.0005	mg/kg		26-JUN-08	TN	R686064
Available N, P, K and S								
Available Nitrate-N	10.2		0.4	mg/kg	19-JUN-08	19-JUN-08	MAK	R682463
Available Phosphate & Potassium								
Available Phosphate-P	31		1	mg/kg	19-JUN-08	19-JUN-08	MAK	R682276
Available Potassium	408		2	mg/kg	19-JUN-08	19-JUN-08	MAK	R682276
Available Sulfate-S	1150		2	mg/kg	19-JUN-08	19-JUN-08	DAD	R682328
Detailed Salinity								
Chloride (Cl)	70		20	mg/L		16-JUN-08	HSC	R680824
SAR								
Calcium (Ca)	416		5.0	mg/L		17-JUN-08	MAT	R680763
Potassium (K)	55.2		2.0	mg/L		17-JUN-08	MAT	R680763
Magnesium (Mg)	350		3.0	mg/L		17-JUN-08	MAT	R680763
Sodium (Na)	937		2.0	mg/L		17-JUN-08	MAT	R680763
SAR	8.19		0.10	SAR		17-JUN-08	MAT	R680763
Sulfur (as SO4)	4170		6	mg/L		17-JUN-08	MAT	R680763
pH and EC (Saturated Paste)								
% Saturation	58.0		0.1	%		16-JUN-08	KC	R680785
pH in Saturated Paste	7.64		0.01	pH		16-JUN-08	KC	R680785
Conductivity Sat. Paste	6.71		0.03	dS m-1		16-JUN-08	KC	R680785
L642291-6 CONTROL 1 (0-0.15M)								
Sampled By: R.C. on 13-JUN-08 @ 14:00								
Matrix: SOIL								
Detailed Salinity								
Chloride (Cl)	20		20	mg/L		18-JUL-08	SCL	R696318
SAR								
Calcium (Ca)	485		5.0	mg/L		21-JUL-08	KMCT	R696851
Potassium (K)	52.3		2.0	mg/L		21-JUL-08	KMCT	R696851
Magnesium (Mg)	96.9		3.0	mg/L		21-JUL-08	KMCT	R696851
Sodium (Na)	109		2.0	mg/L		21-JUL-08	KMCT	R696851
SAR	1.18		0.10	SAR		21-JUL-08	KMCT	R696851
Sulfur (as SO4)	1420		6	mg/L		21-JUL-08	KMCT	R696851
pH and EC (Saturated Paste)								
% Saturation	50.0		0.1	%		18-JUL-08	SLP	R696177
pH in Saturated Paste	7.00		0.01	pH		18-JUL-08	SLP	R696177
Conductivity Sat. Paste	3.04		0.03	dS m-1		18-JUL-08	SLP	R696177
L642291-7 CONTROL 2 (0-0.15M)								
Sampled By: R.C. on 13-JUN-08 @ 14:00								
Matrix: SOIL								
Glyphosate/AMPA								

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L642291-7 CONTROL 2 (0-0.15M)									
Sampled By: R.C. on 13-JUN-08 @ 14:00									
Matrix: SOIL									
Glyphosate/AMPA									
Glyphosate		0.11		0.005	mg/kg		22-JUL-08	JS1	R698550
AMPA		0.22		0.005	mg/kg		22-JUL-08	JS1	R698550
Herb Screen GC/MS									
Surr:	2,4-D d5	129		25-175	%		25-JUL-08	BF	R700488
Surr:	Treflan d14	95		25-175	%		25-JUL-08	BF	R700488
	Clopyralid	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Dicamba	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Mecoprop	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	MCPA	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	2,4-D	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Bromoxynil	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Trifluralin	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Triclopyr	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Triallate	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	2,4,5-T	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Picloram	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Fluazifop-p-butyl	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	Diclofop-methyl	<0.005		0.005	mg/kg		25-JUL-08	BF	R700488
	MUST PSA % > 75um	35		1	%		16-JUN-08	JH1	R680676
Soil Sterilant Screen									
	Tebuthiuron	<0.0005		0.0005	mg/kg		22-JUL-08	NB	R698385
	Bromacil	<0.0005		0.0005	mg/kg		22-JUL-08	NB	R698385
	Simazine	<0.0005		0.0005	mg/kg		22-JUL-08	NB	R698385
	DCPMU	<0.0005		0.0005	mg/kg		22-JUL-08	NB	R698385
	Atrazine	<0.0005		0.0005	mg/kg		22-JUL-08	NB	R698385
	Diuron	0.0026		0.0005	mg/kg		22-JUL-08	NB	R698385
Available N, P, K and S									
	Available Nitrate-N	1.8		0.4	mg/kg	19-JUN-08	19-JUN-08	MAK	R682463
Available Phosphate & Potassium									
	Available Phosphate-P	28		1	mg/kg	19-JUN-08	19-JUN-08	MAK	R682276
	Available Potassium	535		2	mg/kg	19-JUN-08	19-JUN-08	MAK	R682276
	Available Sulfate-S	113		2	mg/kg	19-JUN-08	19-JUN-08	DAD	R682328
Detailed Salinity									
	Chloride (Cl)	<20		20	mg/L		16-JUN-08	HSC	R680824
SAR									
	Calcium (Ca)	195		5.0	mg/L		17-JUN-08	MAT	R680763
	Potassium (K)	41.5		2.0	mg/L		17-JUN-08	MAT	R680763
	Magnesium (Mg)	48.6		3.0	mg/L		17-JUN-08	MAT	R680763
	Sodium (Na)	97.8		2.0	mg/L		17-JUN-08	MAT	R680763
	SAR	1.62		0.10	SAR		17-JUN-08	MAT	R680763
	Sulfur (as SO4)	804		6	mg/L		17-JUN-08	MAT	R680763
pH and EC (Saturated Paste)									
	% Saturation	50.7		0.1	%		16-JUN-08	KC	R680785
	pH in Saturated Paste	6.88		0.01	pH		16-JUN-08	KC	R680785
	Conductivity Sat. Paste	1.62		0.03	dS m-1		16-JUN-08	KC	R680785
L642291-8 CONTROL 3 (0-0.15M)									
Sampled By: R.C. on 13-JUN-08 @ 14:00									
Matrix: SOIL									
Detailed Salinity									

ALS LABORATORY GROUP ANALYTICAL REPORT

[illegible]

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
CL-SAR-CL	Soil	Chloride (Cl) (Saturated Paste)		APHA 4500 - Cl- - E Auto'd Ferricyanide
ETL-BTX,TVH-CCME-CL	Soil	CCME BTEX	CCME CWS-PHC DEC2000	CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TEH-CCME-CL	Soil	CCME Total Extractable Hydrocarbons	CCME CWS-PHC DEC2000	CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TVH,TEH-CCME-CL	Soil	CCME Total Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.

In samples where BTEX and F1 were analyzed, F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:

1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:

1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

GLYPH/AMPA-ED	Soil	Glyphosate/AMPA	EPA 8318-HPLC/Fluorescence
HERBSCR-ED	Soil	Herb Screen GC/MS	EPA 8151-GC/MS
NO3-AVAIL-SK	Soil	Available Nitrate-N	CSSS (1993) 4.3

Available Nitrate and Nitrite are extracted from the soil using a dilute calcium chloride solution.

Nitrate is quantitatively reduced to nitrite by passage of the sample through a copperized cadmium column. The nitrite (reduced nitrate plus original nitrite) is then determined by diazotizing with sulfanilamide followed by coupling with N-(1-naphthyl) ethylenediamine dihydrochloride. The resulting water soluble dye has a magenta color which is measured at colorimetrically at 520nm.

Reference:

Carter, Martin. Soil Sampling and Methods of Analysis. Can. Soc. Soil Sci.(1993) method 4.3

PO4/K-AVAIL-SK	Soil	Available Phosphate & Potassium	Comm. Soil Sci. Plant Anal, 25 (5&6)
PREP-MOISTURE-CL	Soil	% Moisture	Oven dry 105C-Gravimetric
PSA-MUST-CL	Soil	MUST PSA D50 > 75um	ASTM D422-63
SALINITY-INTCHECK-CL	Soil	Salinity calculation check	CSSS 18.4-Calculation
SAR-CALC-CL	Soil	SAR	CSSS 18.4-Calculation
SAT/PH/EC-CL	Soil	pH and EC (Saturated Paste)	CSSS, Chp. 18 - Saturation Extract
SO4-AVAIL-SK	Soil	Available Sulfate-S	NCR-13 (1998) p. 35-39

The soil is extracted with a weak calcium chloride solution. The calcium chloride serves to reduce the extraction of organic materials and increases flocculation of the soil in the extract. Total S in the extract is then determined by ICP-AES, which is considered to be equivalent to the plant available S for mineral soils from the prairies.

Reference:

Recommended Methods of Soil Analysis for Canadian Prairie Agricultural Soils. Alberta Agriculture(1988), p. 28

SO4-PASTE-ICP-CL	Soil	Sulphate (SO4)	AEUB Guide 58-29.7 - ICP-AES
SOIL STER-ED	Soil	Soil Sterilant Screen	EPA 8318-LC/UV

Reference Information

00654

L642291

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
CL	ALS LABORATORY GROUP - CALGARY, ALBERTA, CANADA	ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA
SK	ALS LABORATORY GROUP - SASKATOON, SASKATCHEWAN, CANADA		

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds.

The reported surrogate recovery value provides a measure of method efficiency. The Laboratory control limits are determined under column heading D.L.

mg/kg (units) - unit of concentration based on mass, parts per million.

mg/L (units) - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.



Environmental Division

ALS Laboratory Group Quality Control Report

Workorder: L642291

Report Date: 29-JUL-08

Page 1 of 13

Client: NORTH SHORE ENVIRONMENTAL
127, 11929-40TH STREET S.E.
CALGARY AB T2Z 4M8

Contact: RYAN COX

Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<u>CL-SAR-CL</u>		<u>Soil</u>						
Batch	R680824							
WG784233-4	DUP	L642291-3						
Chloride (Cl)		<20	<20	RPD-NA	mg/L	N/A	13	16-JUN-08
WG784233-3	IRM	SALSTD3-CL						
Chloride (Cl)			82		%		75-125	16-JUN-08
WG784233-2	LCS							
Chloride (Cl)			101		%		90-111	16-JUN-08
WG784233-1	MB							
Chloride (Cl)			<20		mg/L		20	16-JUN-08
WG784233-5	MS	L642169-1						
Chloride (Cl)			92		%		80-113	16-JUN-08
Batch	R696318							
WG803291-4	DUP	L656587-2						
Chloride (Cl)		<20	<20	RPD-NA	mg/L	N/A	13	18-JUL-08
WG803291-5	DUP	L656317-5						
Chloride (Cl)		100	110	J	mg/L	10	80	18-JUL-08
WG803291-6	DUP	L656317-34						
Chloride (Cl)		1540	1530		mg/L	0.80	13	18-JUL-08
WG803291-3	IRM	SALSTD3-CL						
Chloride (Cl)			92		%		75-125	18-JUL-08
WG803291-2	LCS							
Chloride (Cl)			102		%		90-111	18-JUL-08
WG803291-1	MB							
Chloride (Cl)			<20		mg/L		20	18-JUL-08
WG803291-7	MS	L656587-2						
Chloride (Cl)			99		%		80-113	18-JUL-08
<u>ETL-BTX,TVH-CCME-CL</u>		<u>Soil</u>						
Batch	R680754							
WG783492-2	DUP	L642293-1						
Benzene		<0.005	<0.005	RPD-NA	mg/kg	N/A	46	16-JUN-08
Ethylbenzene		<0.01	<0.01	RPD-NA	mg/kg	N/A	46	16-JUN-08
Toluene		<0.01	0.01	RPD-NA	mg/kg	N/A	46	16-JUN-08
TVH: (C6-C10 / No BTEX Correction)		<5	<5	RPD-NA	mg/kg	N/A	46	16-JUN-08
Xylenes		<0.01	<0.01	RPD-NA	mg/kg	N/A	46	16-JUN-08
WG783492-1	MB							
Benzene			<0.005		mg/kg		0.005	16-JUN-08
Ethylbenzene			<0.01		mg/kg		0.01	16-JUN-08
Toluene			<0.01		mg/kg		0.01	16-JUN-08

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ETL-BTX,TVH-CCME-CL <u>Soil</u>								
Batch	R680754							
WG783492-1	MB							
TVH: (C6-C10 / No BTEX Correction)			<5		mg/kg		5	16-JUN-08
Xylenes			<0.01		mg/kg		0.01	16-JUN-08
WG783492-3	MS	L642293-2						
Benzene			93		%		45-137	16-JUN-08
Ethylbenzene			93		%		49-142	16-JUN-08
Toluene			93		%		59-144	16-JUN-08
TVH: (C6-C10 / No BTEX Correction)			111		%		46-145	16-JUN-08
Xylenes			90		%		48-143	16-JUN-08
ETL-TEH-CCME-CL <u>Soil</u>								
Batch	R680368							
WG783754-3	DUP	L642293-1						
TEH: (C10-C16)		<5	<5	RPD-NA	mg/kg	N/A	46	15-JUN-08
TEH: (C16-C34)		6	7	J	mg/kg	0	20	15-JUN-08
TEH: (C34-C50)		<5	<5	RPD-NA	mg/kg	N/A	46	15-JUN-08
WG783754-7	DUP	L641908-1						
TEH: (C10-C16)		<5	<5	RPD-NA	mg/kg	N/A	46	15-JUN-08
TEH: (C16-C34)		22	21	J	mg/kg	1	20	15-JUN-08
TEH: (C34-C50)		<5	<5	RPD-NA	mg/kg	N/A	46	15-JUN-08
WG783754-2	MB							
TEH: (C10-C16)			<5		mg/kg		5	15-JUN-08
TEH: (C16-C34)			<5		mg/kg		5	15-JUN-08
TEH: (C34-C50)			<5		mg/kg		5	15-JUN-08
WG783754-4	MS	L642293-2						
TEH: (C10-C16)			94		%		42-126	15-JUN-08
TEH: (C16-C34)			94		%		42-126	15-JUN-08
TEH: (C34-C50)			94		%		42-126	15-JUN-08
WG783754-5	MS	L642104-2						
TEH: (C10-C16)			95		%		42-126	16-JUN-08
TEH: (C16-C34)			95		%		42-126	16-JUN-08
TEH: (C34-C50)			95		%		42-126	16-JUN-08
WG783754-8	MS	L641908-2						
TEH: (C10-C16)			97		%		42-126	16-JUN-08
TEH: (C16-C34)			97		%		42-126	16-JUN-08
TEH: (C34-C50)			97		%		42-126	16-JUN-08

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GLYPH/AMPA-ED		Soil						
Batch	R688888							
WG784896-1	MB							
AMPA			<0.005		mg/kg		0.005	02-JUL-08
Glyphosate			<0.005		mg/kg		0.005	02-JUL-08
WG784896-2	MS	L642291-3						
AMPA			284	E	%		-4-164	02-JUL-08
Glyphosate			161	E	%		-10-156	02-JUL-08
Batch	R698550							
WG803514-1	MB							
AMPA			<0.005		mg/kg		0.005	22-JUL-08
Glyphosate			<0.005		mg/kg		0.005	22-JUL-08
WG803514-2	MS	L642291-7						
AMPA			132		%		-4-164	22-JUL-08
Glyphosate			84		%		-10-156	22-JUL-08
HERBSCR-ED		Soil						
Batch	R684722							
WG784933-4	LCS							
2,4,5-T			73		%		0-200	23-JUN-08
2,4-D			79		%		30-151	23-JUN-08
Bromoxynil			80		%		-3-190	23-JUN-08
Clopyralid			70		%		-5-160	23-JUN-08
Diclofop-methyl			78		%		12-184	23-JUN-08
Fluazifop-p-butyl			68		%		55-145	23-JUN-08
MCPA			80		%		17-158	23-JUN-08
Mecoprop			86		%		30-154	23-JUN-08
Picloram			92		%		5-147	23-JUN-08
Triallate			71		%		14-155	23-JUN-08
Triclopyr			79		%		55-145	23-JUN-08
Trifluralin			72		%		-1-174	23-JUN-08
WG784933-2	MB							
2,4,5-T			<0.005		mg/kg		0.005	23-JUN-08
2,4-D			<0.005		mg/kg		0.005	23-JUN-08
Bromoxynil			<0.005		mg/kg		0.005	23-JUN-08
Clopyralid			<0.005		mg/kg		0.005	23-JUN-08
Dicamba			<0.005		mg/kg		0.005	23-JUN-08
Diclofop-methyl			<0.005		mg/kg		0.005	23-JUN-08

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HERBSCR-ED		Soil						
Batch	R684722							
WG784933-2	MB							
Fluazifop-p-butyl			<0.005		mg/kg		0.005	23-JUN-08
MCPA			<0.005		mg/kg		0.005	23-JUN-08
Mecoprop			<0.005		mg/kg		0.005	23-JUN-08
Picloram			<0.005		mg/kg		0.005	23-JUN-08
Triallate			<0.005		mg/kg		0.005	23-JUN-08
Triclopyr			<0.005		mg/kg		0.005	23-JUN-08
Trifluralin			<0.005		mg/kg		0.005	23-JUN-08
Batch	R700488							
WG803497-2	MB							
2,4,5-T			<0.005		mg/kg		0.005	25-JUL-08
2,4-D			<0.005		mg/kg		0.005	25-JUL-08
Bromoxynil			<0.005		mg/kg		0.005	25-JUL-08
Clopyralid			<0.005		mg/kg		0.005	25-JUL-08
Dicamba			<0.005		mg/kg		0.005	25-JUL-08
Diclofop-methyl			<0.005		mg/kg		0.005	25-JUL-08
Fluazifop-p-butyl			<0.005		mg/kg		0.005	25-JUL-08
MCPA			<0.005		mg/kg		0.005	25-JUL-08
Mecoprop			<0.005		mg/kg		0.005	25-JUL-08
Picloram			<0.005		mg/kg		0.005	25-JUL-08
Triallate			<0.005		mg/kg		0.005	25-JUL-08
Triclopyr			<0.005		mg/kg		0.005	25-JUL-08
Trifluralin			<0.005		mg/kg		0.005	25-JUL-08
WG803497-7	MB							
2,4,5-T			<0.005		mg/kg		0.005	25-JUL-08
2,4-D			<0.005		mg/kg		0.005	25-JUL-08
Bromoxynil			<0.005		mg/kg		0.005	25-JUL-08
Clopyralid			<0.005		mg/kg		0.005	25-JUL-08
Dicamba			<0.005		mg/kg		0.005	25-JUL-08
Diclofop-methyl			<0.005		mg/kg		0.005	25-JUL-08
Fluazifop-p-butyl			<0.005		mg/kg		0.005	25-JUL-08
MCPA			<0.005		mg/kg		0.005	25-JUL-08
Mecoprop			<0.005		mg/kg		0.005	25-JUL-08
Picloram			<0.005		mg/kg		0.005	25-JUL-08

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HERBSCR-ED		Soil						
Batch	R700488							
WG803497-7	MB							
Triallate			<0.005		mg/kg		0.005	25-JUL-08
Triclopyr			<0.005		mg/kg		0.005	25-JUL-08
Trifluralin			<0.005		mg/kg		0.005	25-JUL-08
WG803497-3	MS	L642291-7						
2,4,5-T			92		%		33-158	25-JUL-08
2,4-D			95		%		21-144	25-JUL-08
Bromoxynil			94		%		32-176	25-JUL-08
Clopyralid			91		%		28-127	25-JUL-08
Dicamba			103		%		36-153	25-JUL-08
Diclofop-methyl			82		%		13-169	25-JUL-08
Fluazifop-p-butyl			56		%		26-145	25-JUL-08
MCPA			102		%		38-150	25-JUL-08
Mecoprop			96		%		49-134	25-JUL-08
Picloram			78		%		8-136	25-JUL-08
Triallate			70		%		28-141	25-JUL-08
Triclopyr			93		%		36-147	25-JUL-08
Trifluralin			67		%		13-161	25-JUL-08
NO3-AVAIL-SK		Soil						
Batch	R682463							
WG785168-1	DUP	L642291-3						
Available Nitrate-N		1.8	1.7	J	mg/kg	0.1	0.8	19-JUN-08
WG785168-3	IRM	FARM2005						
Available Nitrate-N			92		%		63-117	19-JUN-08
WG785168-2	MB							
Available Nitrate-N			<0.4		mg/kg		2	19-JUN-08
PO4/K-AVAIL-SK		Soil						
Batch	R682276							
WG785172-1	DUP	L642291-5						
Available Phosphate-P		31	31		mg/kg	0.0	25	19-JUN-08
Available Potassium		408	411		mg/kg	0.73	16	19-JUN-08
WG785172-3	IRM	FARM2005						
Available Phosphate-P			110		%		73-127	19-JUN-08
Available Potassium			91		%		62-117	19-JUN-08
WG785172-2	MB							

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<u>PO4/K-AVAIL-SK</u>	<u>Soil</u>							
Batch	R682276							
WG785172-2	MB							
Available Phosphate-P			<1		mg/kg		2	19-JUN-08
Available Potassium			<2		mg/kg		10	19-JUN-08
<u>PREP-MOISTURE-CL</u>	<u>Soil</u>							
Batch	R680200							
WG783526-2	DUP	L642293-1						
% Moisture		8.3	8.5		%	2.0	15	15-JUN-08
<u>PSA-MUST-CL</u>	<u>Soil</u>							
Batch	R680676							
WG784085-2	DUP	L642291-7						
MUST PSA % > 75um		35	34		%	0.58	15	16-JUN-08
WG784085-1	IRM	SALSTD3-CL						
MUST PSA % > 75um			92		%		85-115	16-JUN-08
<u>SAR-CALC-CL</u>	<u>Soil</u>							
Batch	R680763							
WG783961-14	DUP	L642291-3						
Calcium (Ca)		116	108		mg/L	4.6	20	17-JUN-08
Magnesium (Mg)		24.0	22.2	J	mg/L	2.1	12	17-JUN-08
Potassium (K)		36.6	35.7		mg/L	4.7	20	17-JUN-08
Sodium (Na)		63.9	65.7		mg/L	12	20	17-JUN-08
WG783961-5	DUP	L641850-8						
Calcium (Ca)		49.9	54.3	J	mg/L	4.4	20	16-JUN-08
Magnesium (Mg)		31.0	33.3		mg/L	7.3	20	16-JUN-08
Potassium (K)		9.1	9.9	J	mg/L	0.8	8	16-JUN-08
Sodium (Na)		221	229		mg/L	3.7	20	16-JUN-08
WG783961-4	LCS							
Calcium (Ca)			97		%		90-110	16-JUN-08
Magnesium (Mg)			96		%		89-108	16-JUN-08
Potassium (K)			100		%		90-110	16-JUN-08
Sodium (Na)			100		%		89-108	16-JUN-08
WG783961-1	MB							
Calcium (Ca)			<5.0		mg/L		5	16-JUN-08
Magnesium (Mg)			<3.0		mg/L		3	16-JUN-08
Potassium (K)			<2.0		mg/L		2	16-JUN-08
							2	

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<u>SAR-CALC-CL</u>		<u>Soil</u>						
Batch	R680763							
WG783961-1	MB							
Sodium (Na)			<2.0		mg/L		2	16-JUN-08
WG783961-2	MB							
Calcium (Ca)			<5.0		mg/L		5	17-JUN-08
Magnesium (Mg)			<3.0		mg/L		3	17-JUN-08
Potassium (K)			<2.0		mg/L		2	17-JUN-08
Sodium (Na)			<2.0		mg/L		2	17-JUN-08
Batch	R681861							
WG785579-15	DUP	L642671-4						
Calcium (Ca)		357	335		mg/L	6.6	20	19-JUN-08
Magnesium (Mg)		514	494		mg/L	4.1	20	19-JUN-08
Potassium (K)		26.9	25.0		mg/L	7.2	20	19-JUN-08
Sodium (Na)		1520	1440		mg/L	5.2	20	19-JUN-08
WG785579-16	DUP	L642291-3						
Calcium (Ca)		116	111		mg/L	4.0	20	19-JUN-08
Magnesium (Mg)		24.0	22.9	J	mg/L	1.1	12	19-JUN-08
Potassium (K)		36.6	35.8		mg/L	2.2	20	19-JUN-08
Sodium (Na)		63.9	62.7		mg/L	1.8	20	19-JUN-08
WG785579-14	LCS							
Calcium (Ca)			95		%		90-110	19-JUN-08
Magnesium (Mg)			98		%		89-108	19-JUN-08
Potassium (K)			98		%		90-110	19-JUN-08
Sodium (Na)			95		%		89-108	19-JUN-08
WG785579-13	MB							
Calcium (Ca)			<5.0		mg/L		5	19-JUN-08
Magnesium (Mg)			<3.0		mg/L		3	19-JUN-08
Potassium (K)			<2.0		mg/L		2	19-JUN-08
Sodium (Na)			<2.0		mg/L		2	19-JUN-08
Batch	R696851							
WG803968-12	DUP	L642291-6						
Calcium (Ca)		485	498		mg/L	2.7	20	21-JUL-08
Magnesium (Mg)		96.9	102		mg/L	5.5	20	21-JUL-08
Potassium (K)		52.3	55.2		mg/L	5.6	20	21-JUL-08
Sodium (Na)		109	120		mg/L	10	20	21-JUL-08
WG803968-13	DUP	L655043-20						

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<u>SAR-CALC-CL</u>		<u>Soil</u>						
Batch	R696851							
WG803968-13	DUP	L655043-20						
Calcium (Ca)		26.5	25.9	J	mg/L	0.7	20	22-JUL-08
Magnesium (Mg)		26.2	25.9	J	mg/L	0.3	12	22-JUL-08
Potassium (K)		8.8	8.7	J	mg/L	0.1	8	22-JUL-08
Sodium (Na)		194	193		mg/L	0.26	20	22-JUL-08
WG803968-14	DUP	L657388-17						
Calcium (Ca)		120	120		mg/L	0.50	20	22-JUL-08
Magnesium (Mg)		29.1	29.2	J	mg/L	0.1	12	22-JUL-08
Potassium (K)		5.5	5.4	J	mg/L	0.1	8	22-JUL-08
Sodium (Na)		48.9	48.4		mg/L	0.99	20	22-JUL-08
WG803968-15	DUP	L657388-46						
Calcium (Ca)		77.2	74.9		mg/L	3.0	20	22-JUL-08
Magnesium (Mg)		15.0	14.5	J	mg/L	0.5	12	22-JUL-08
Potassium (K)		3.3	3.1	J	mg/L	0.1	8	22-JUL-08
Sodium (Na)		53.8	53.2		mg/L	1.1	20	22-JUL-08
WG803968-16	DUP	L657388-61						
Calcium (Ca)		123	124		mg/L	0.32	20	22-JUL-08
Magnesium (Mg)		20.7	20.9	J	mg/L	0.2	12	22-JUL-08
Potassium (K)		8.9	9.2	J	mg/L	0.3	8	22-JUL-08
Sodium (Na)		51.8	50.4		mg/L	2.7	20	22-JUL-08
WG803968-17	DUP	L657388-91						
Calcium (Ca)		69.5	75.6		mg/L	8.4	20	22-JUL-08
Magnesium (Mg)		15.2	16.4	J	mg/L	1.3	12	22-JUL-08
Potassium (K)		4.9	5.0	J	mg/L	0.1	8	22-JUL-08
Sodium (Na)		34.5	36.9		mg/L	6.9	20	22-JUL-08
WG803968-18	DUP	L657388-105						
Calcium (Ca)		18.1	17.7	J	mg/L	0.4	20	22-JUL-08
Magnesium (Mg)		8.5	8.3	J	mg/L	0.2	12	22-JUL-08
Potassium (K)		2.4	2.4	J	mg/L	0.0	8	22-JUL-08
Sodium (Na)		16.2	16.1	J	mg/L	0.1	8	22-JUL-08
WG803968-10	IRM	SALSTD4-CL						
Calcium (Ca)			100		%		75-125	21-JUL-08
Magnesium (Mg)			101		%		75-125	21-JUL-08
Potassium (K)			97		%		75-125	21-JUL-08
Sodium (Na)			85		%		75-125	21-JUL-08

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<u>SAR-CALC-CL</u>		<u>Soil</u>						
Batch	R696851							
WG803968-11	LCS							
Calcium (Ca)			105		%		90-110	21-JUL-08
Magnesium (Mg)			97		%		89-108	21-JUL-08
Potassium (K)			101		%		90-110	21-JUL-08
Sodium (Na)			101		%		89-108	21-JUL-08
WG803968-9	MB							
Calcium (Ca)			<5.0		mg/L		5	21-JUL-08
Magnesium (Mg)			<3.0		mg/L		3	21-JUL-08
Potassium (K)			<2.0		mg/L		2	21-JUL-08
Sodium (Na)			<2.0		mg/L		2	21-JUL-08
<u>SAT/PH/EC-CL</u>		<u>Soil</u>						
Batch	R680785							
WG784178-2	DUP	L642291-3						
% Saturation		44.7	44.7		%	0.0	6.5	16-JUN-08
Conductivity Sat. Paste		1.01	1.02		dS m-1	1.2	13	16-JUN-08
pH in Saturated Paste		7.24	7.24	J	pH	0.00	0.33	16-JUN-08
WG784178-1	IRM	SALSTD3-CL						
% Saturation			100		%		95-105	16-JUN-08
Conductivity Sat. Paste			94		%		93-108	16-JUN-08
pH in Saturated Paste			7.15		pH		7.12-8.14	16-JUN-08
Batch	R696177							
WG803213-2	DUP	L642291-6						
% Saturation		50.0	50.0		%	0.0	6.5	18-JUL-08
Conductivity Sat. Paste		3.04	3.17		dS m-1	4.2	13	18-JUL-08
pH in Saturated Paste		7.00	7.00	J	pH	0.00	0.33	18-JUL-08
WG803213-3	DUP	L651585-9						
% Saturation		51.3	51.3		%	0.0	6.5	18-JUL-08
Conductivity Sat. Paste		4.06	4.31		dS m-1	6.0	13	18-JUL-08
pH in Saturated Paste		7.50	7.51	J	pH	0.01	0.33	18-JUL-08
WG803213-4	DUP	L656317-5						
% Saturation		44.7	44.7		%	0.0	6.5	18-JUL-08
Conductivity Sat. Paste		5.70	5.83		dS m-1	2.3	13	18-JUL-08
pH in Saturated Paste		7.69	7.71	J	pH	0.02	0.33	18-JUL-08
WG803213-5	DUP	L656317-34						
% Saturation		48.7	48.7		%	0.0	6.5	18-JUL-08

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Workorder: L642291

Report Date: 29-JUL-08

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<u>SAT/PH/EC-CL</u>		<u>Soil</u>						
Batch	R696177							
WG803213-5	DUP	L656317-34						
Conductivity Sat. Paste		8.14	8.07		dS m-1	0.86	13	18-JUL-08
pH in Saturated Paste		7.57	7.58	J	pH	0.01	0.33	18-JUL-08
WG803213-6	DUP	L656587-2						
% Saturation		44.0	44.0		%	0.0	6.5	18-JUL-08
Conductivity Sat. Paste		1.06	1.07		dS m-1	0.47	13	18-JUL-08
pH in Saturated Paste		5.97	5.96	J	pH	0.01	0.33	18-JUL-08
WG803213-1	IRM	SALSTD4-CL						
% Saturation			100		%		95-105	18-JUL-08
Conductivity Sat. Paste			102		%		93-108	18-JUL-08
pH in Saturated Paste			7.58		pH		7.02-7.92	18-JUL-08
<u>SO4-AVAIL-SK</u>		<u>Soil</u>						
Batch	R682328							
WG785170-1	DUP	L642291-3						
Available Sulfate-S		33	40		mg/kg	20	24	19-JUN-08
WG785170-3	IRM	FARM2005						
Available Sulfate-S			130		%		58-142	19-JUN-08
WG785170-2	MB							
Available Sulfate-S			<2		mg/kg		4	19-JUN-08
<u>SO4-PASTE-ICP-CL</u>		<u>Soil</u>						
Batch	R680763							
WG783961-5	DUP	L641850-8						
Sulfur (as SO4)		504	549		mg/L	8.6	20	16-JUN-08
WG783961-1	MB							
Sulfur (as SO4)			<6		mg/L		6	16-JUN-08
WG783961-2	MB							
Sulfur (as SO4)			<6		mg/L		6	17-JUN-08
Batch	R681861							
WG785579-15	DUP	L642671-4						
Sulfur (as SO4)		6080	5780		mg/L	5.0	20	19-JUN-08
WG785579-16	DUP	L642291-3						
Sulfur (as SO4)		297	294		mg/L	1.1	20	19-JUN-08
WG785579-14	LCS							
Sulfur (as SO4)			92		%		91-110	19-JUN-08
WG785579-13	MB							
Sulfur (as SO4)			<6		mg/L		6	19-JUN-08

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<u>SO4-PASTE-ICP-CL</u>		<u>Soil</u>						
Batch	R696851							
WG803968-12	DUP	L642291-6						
Sulfur (as SO4)		1420	1470		mg/L	3.4	20	21-JUL-08
WG803968-13	DUP	L655043-20						
Sulfur (as SO4)		257	261		mg/L	1.4	20	22-JUL-08
WG803968-14	DUP	L657388-17						
Sulfur (as SO4)		417	420		mg/L	0.71	20	22-JUL-08
WG803968-15	DUP	L657388-46						
Sulfur (as SO4)		265	255		mg/L	3.7	20	22-JUL-08
WG803968-16	DUP	L657388-61						
Sulfur (as SO4)		410	407		mg/L	0.71	20	22-JUL-08
WG803968-17	DUP	L657388-91						
Sulfur (as SO4)		100	108		mg/L	8.1	20	22-JUL-08
WG803968-18	DUP	L657388-105						
Sulfur (as SO4)		19	19	J	mg/L	0	24	22-JUL-08
WG803968-10	IRM	SALSTD4-CL						
Sulfur (as SO4)			99		%		75-125	21-JUL-08
WG803968-11	LCS							
Sulfur (as SO4)			92		%		91-110	21-JUL-08
WG803968-9	MB							
Sulfur (as SO4)			<6		mg/L		6	21-JUL-08
<u>SOIL STER-ED</u>		<u>Soil</u>						
Batch	R686064							
WG784933-2	MB							
Atrazine			<0.0005		mg/kg		0.0005	26-JUN-08
Bromacil			<0.0005		mg/kg		0.0005	26-JUN-08
DCPMU			<0.0005		mg/kg		0.0005	26-JUN-08
Diuron			<0.0005		mg/kg		0.0005	26-JUN-08
Simazine			<0.0005		mg/kg		0.0005	26-JUN-08
Tebuthiuron			<0.0005		mg/kg		0.0005	26-JUN-08
WG784933-3	MS	L642290-3						
Atrazine			83		%		8-158	26-JUN-08
Bromacil			109		%		-1-149	26-JUN-08
DCPMU			100		%		-1-130	26-JUN-08
Diuron			71		%		-19-170	26-JUN-08
Simazine			74		%		1-161	26-JUN-08
Tebuthiuron			172	E	%		0-162	26-JUN-08

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Test	Matrix	Reference	Result	Qualifier	Units	RPD	Limit	Analyzed
<u>SOIL STER-ED</u>		<u>Soil</u>						
Batch	R698385							
WG803497-2	MB							
Atrazine			<0.0005		mg/kg		0.0005	22-JUL-08
Bromacil			<0.0005		mg/kg		0.0005	22-JUL-08
DCPMU			<0.0005		mg/kg		0.0005	22-JUL-08
Diuron			<0.0005		mg/kg		0.0005	22-JUL-08
Simazine			<0.0005		mg/kg		0.0005	22-JUL-08
Tebuthiuron			<0.0005		mg/kg		0.0005	22-JUL-08
WG803497-3	MS	L642291-7						
Atrazine			97		%		8-158	22-JUL-08
Bromacil			85		%		-1-149	22-JUL-08
DCPMU			85		%		-1-130	22-JUL-08
Diuron			96		%		-19-170	22-JUL-08
Simazine			91		%		1-161	22-JUL-08
Tebuthiuron			91		%		0-162	22-JUL-08

ALS Laboratory Group Quality Control Report

Workorder: L642291

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Legend:

Limit	99% Confidence Interval (Laboratory Control Limits)
DUP	Duplicate
RPD	Relative Percent Difference
N/A	Not Available
LCS	Laboratory Control Sample
SRM	Standard Reference Material
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ADE	Average Desorption Efficiency
MB	Method Blank
IRM	Internal Reference Material
CRM	Certified Reference Material
CCV	Continuing Calibration Verification
CVS	Calibration Verification Standard
LCSD	Laboratory Control Sample Duplicate

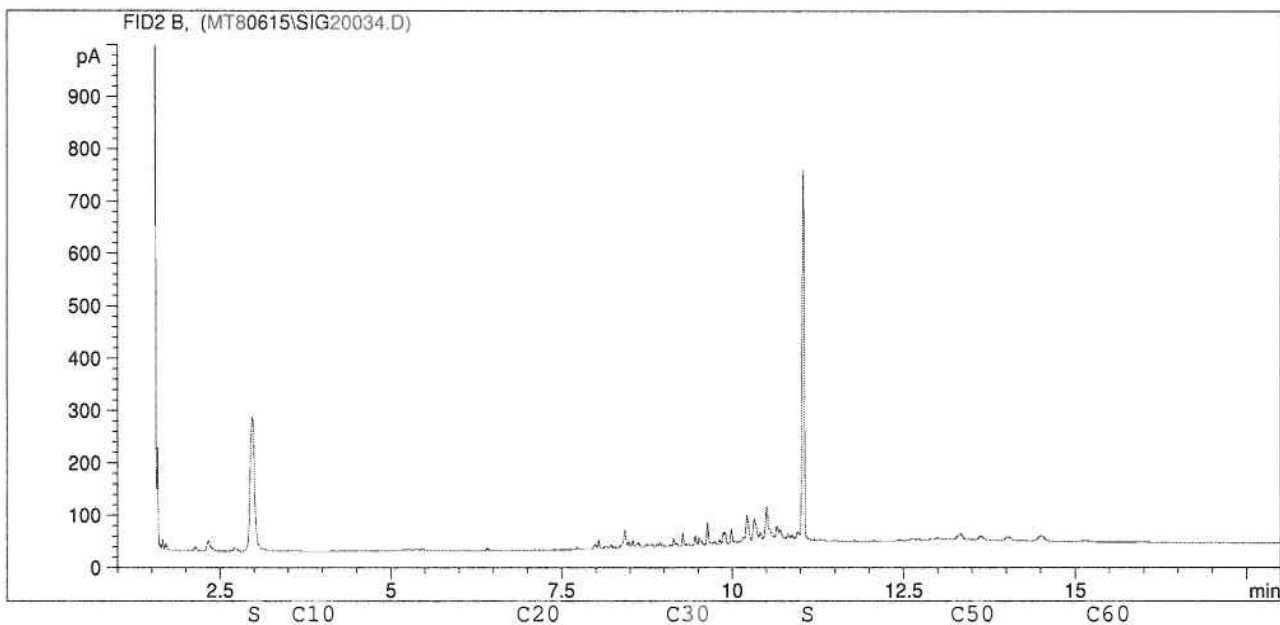
Sample Parameter Qualifier Definitions:

Qualifier	Description
E	Matrix Spike recovery outside ALS DQO due to analyte background in sample.
J	Duplicate results and limits are expressed in terms of absolute difference.
RPD-NA	Relative Percent Difference Not Available due to result(s) being less than detection limit.

Client ID: POINT 3 (0-0.15M) ->

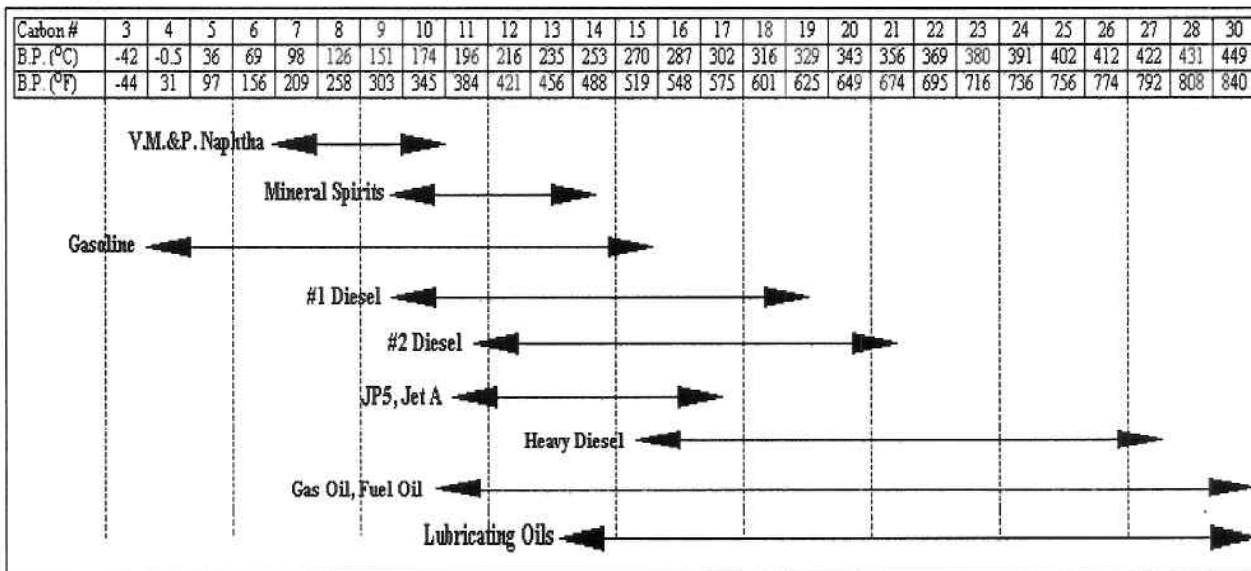


Sample ID: L642291-3 V20
Injection Date: 6/16/2008 5:55:20 AM
Injection Time: 6/16/2008 5:55:20 AM
Instrument ID: 6890HP6
Operator: organics



S=Surrogate

Boiling Point Distribution Range for Petroleum Based Fuel Products

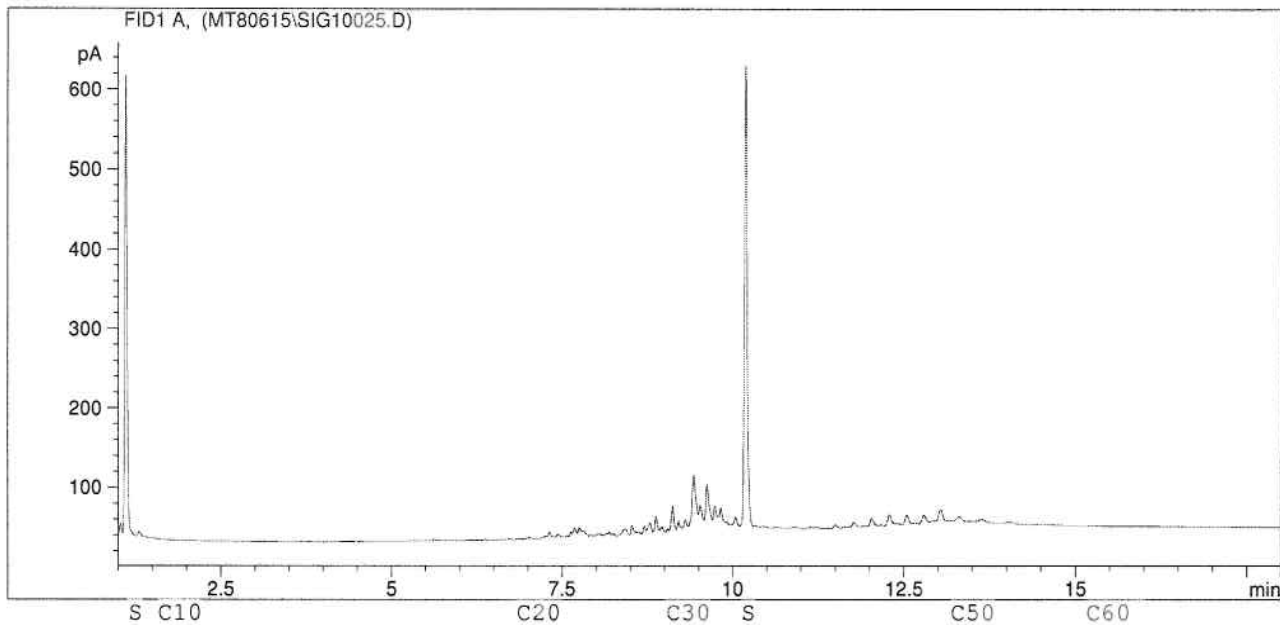


Adapted from: Drews, A.W., ED. Manual on Hydrocarbon Analysis, 4th ed.; American Society for Testing and Materials: Philadelphia, PA., 1989: p XVIII.

Client ID: POINT 5 (0-0.15M) ->

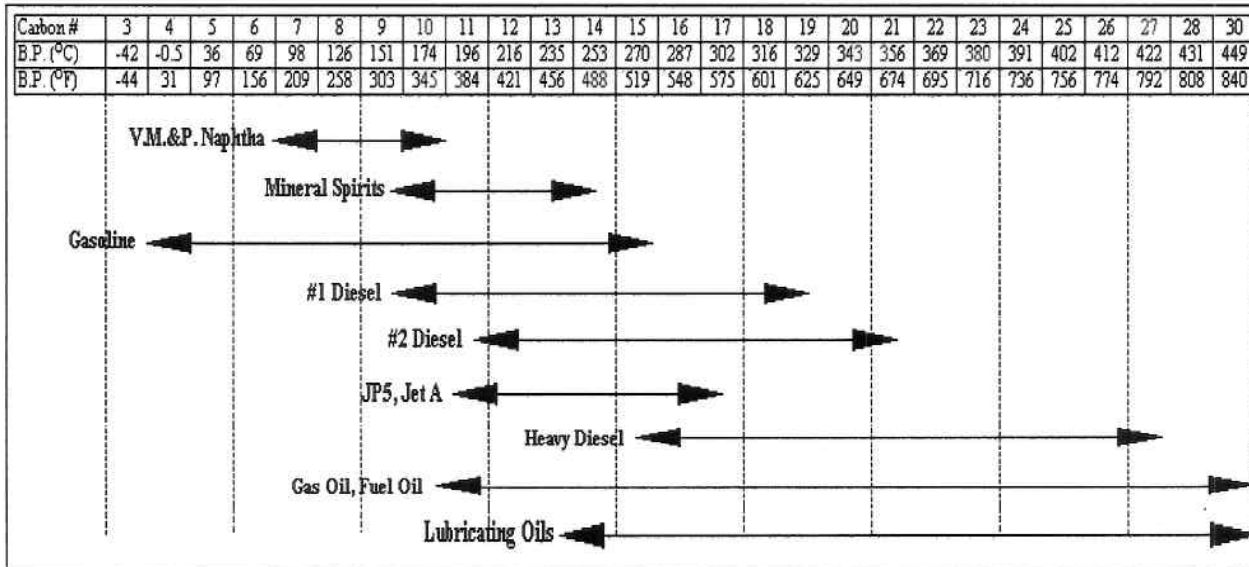


Sample ID: L642291-5 V20
Injection Date: 6/16/2008 1:08:42 AM
Injection Time: 6/16/2008 1:08:42 AM
Instrument ID: 6890HP6
Operator: organics



S=Surrogate

Boiling Point Distribution Range for Petroleum Based Fuel Products



Adapted from: Drews, A.W., ED. Manual on Hydrocarbon Analysis, 4th ed.; American Society for Testing and Materials: Philadelphia, PA., 1989: p XVIII.



Environmental Division

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By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the reverse page of the white report copy.

RELINQUISHED BY: <i>Robert J. Kelly</i>	DATE & TIME: <i>June 13 1640</i>	RECEIVED BY: <i>[Signature]</i>	DATE & TIME: <i>June 13/08</i>	TEMPERATURE <i>21°</i> SAMPLES RECEIVED IN GOOD CONDITION? YES / NO (If no provide details)
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME: <i>6:35 PM</i>	



Environmental Division

Certificate of Analysis

NORTH SHORE ENVIRONMENTAL

ATTN: ANGELA BRICKER

127, 11929 40 ST SE

CALGARY AB

Reported On: 07-NOV-08 04:44 PM

Lab Work Order #: **L700374**

Date Received: **23-OCT-08**

Project P.O. #:

Job Reference:

Legal Site Desc: 1-18-17-18W4

CofC Numbers: 08-052298, 08-052299

Other Information:

Comments:

BRENT WHITEHEAD
Client Services Manager

THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL WITHOUT THE WRITTEN AUTHORITY OF THE LABORATORY.
ALL SAMPLES WILL BE DISPOSED OF AFTER 30 DAYS FOLLOWING ANALYSIS. PLEASE CONTACT THE LAB IF YOU
REQUIRE ADDITIONAL SAMPLE STORAGE TIME.

ALS Canada Ltd. (formerly ETL Chemspec Analytical Ltd.)
Part of the **ALS Laboratory Group**

Bay 2, 1313-44 Ave. N.E., Calgary, AB T2E 6L5
Phone: +1 403 291 9897 Fax: +1 403 291 0298 www.alsglobal.com
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ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L700374-1 POINT 6									
Sampled By: AB on 23-OCT-08									
Matrix: SOIL									
Glyphosate/AMPA									
Glyphosate		3.2		0.005	mg/kg		05-NOV-08	BF	R753276
AMPA		3.5		0.005	mg/kg		05-NOV-08	BF	R753276
Herbicides & Pesticides in Soil									
Surr:	2,4-D d5	96		25-175	%		03-NOV-08	BF	R751747
Surr:	Treflan d14	53		25-175	%		03-NOV-08	BF	R751747
	Clopyralid	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Dicamba	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Mecoprop	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	MCPA	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4-D	0.011		0.005	mg/kg		03-NOV-08	BF	R751747
	Bromoxynil	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Trifluralin	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triclopyr	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triallate	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4,5-T	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Picloram	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Fluazifop-p-butyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Diclofop-methyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
L700374-2 POINT 7									
Sampled By: AB on 23-OCT-08									
Matrix: SOIL									
Glyphosate/AMPA									
Glyphosate		3.0		0.005	mg/kg		05-NOV-08	BF	R753276
AMPA		2.6		0.005	mg/kg		05-NOV-08	BF	R753276
Herbicides & Pesticides in Soil									
Surr:	2,4-D d5	94		25-175	%		03-NOV-08	BF	R751747
Surr:	Treflan d14	53		25-175	%		03-NOV-08	BF	R751747
	Clopyralid	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Dicamba	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Mecoprop	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	MCPA	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4-D	0.009		0.005	mg/kg		03-NOV-08	BF	R751747
	Bromoxynil	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Trifluralin	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triclopyr	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triallate	0.007		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4,5-T	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Picloram	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Fluazifop-p-butyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Diclofop-methyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Detailed Salinity									
Chloride (Cl)		100		20	mg/L		29-OCT-08	RZF	R748915
EC (Saturated Paste)									
% Saturation		40.0		0.1	%		29-OCT-08	JH1	R748801
Conductivity Sat. Paste		3.57		0.03	dS m-1		29-OCT-08	JH1	R748801
SAR									
Calcium (Ca)		529		5.0	mg/L		29-OCT-08	KMCT	R748980
Potassium (K)		28.1		2.0	mg/L		29-OCT-08	KMCT	R748980
Magnesium (Mg)		170		3.0	mg/L		29-OCT-08	KMCT	R748980

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L700374-2	POINT 7								
Sampled By:	AB on 23-OCT-08								
Matrix:	SOIL								
Detailed Salinity SAR									
	Sodium (Na)	233		2.0	mg/L		29-OCT-08	KMCT	R748980
	SAR	2.25		0.10	SAR		29-OCT-08	KMCT	R748980
	Sulfur (as SO4)	1920		6	mg/L		29-OCT-08	KMCT	R748980
	pH (1:2 CaCl2)	7.90		0.01	pH		30-OCT-08	CDC	R749585
L700374-3	POINT 8								
Sampled By:	AB on 23-OCT-08								
Matrix:	SOIL								
Glyphosate/AMPA									
	Glyphosate	2.6		0.005	mg/kg		05-NOV-08	BF	R753276
	AMPA	3.6		0.005	mg/kg		05-NOV-08	BF	R753276
Herbicides & Pesticides in Soil									
Surr:	2,4-D d5	82		25-175	%		03-NOV-08	BF	R751747
Surr:	Treflan d14	45		25-175	%		03-NOV-08	BF	R751747
	Clopyralid	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Dicamba	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Mecoprop	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	MCPA	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4-D	0.010		0.005	mg/kg		03-NOV-08	BF	R751747
	Bromoxynil	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Trifluralin	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triclopyr	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triallate	0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4,5-T	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Picloram	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Fluazifop-p-butyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Diclofop-methyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Note: Low level of ethalfluralin found.									
L700374-4	POINT 9								
Sampled By:	AB on 23-OCT-08								
Matrix:	SOIL								
Glyphosate/AMPA									
	Glyphosate	0.094		0.005	mg/kg		05-NOV-08	BF	R753276
	AMPA	0.15		0.005	mg/kg		05-NOV-08	BF	R753276
Herbicides & Pesticides in Soil									
Surr:	2,4-D d5	123		25-175	%		03-NOV-08	BF	R751747
Surr:	Treflan d14	68		25-175	%		03-NOV-08	BF	R751747
	Clopyralid	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Dicamba	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Mecoprop	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	MCPA	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4-D	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Bromoxynil	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Trifluralin	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triclopyr	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triallate	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4,5-T	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Picloram	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Fluazifop-p-butyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L700374-4 POINT 9									
Sampled By: AB on 23-OCT-08									
Matrix: SOIL									
Herbicides & Pesticides in Soil									
Diclofop-methyl		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Detailed Salinity									
Chloride (Cl)		90		20	mg/L		29-OCT-08	RZF	R748915
EC (Saturated Paste)									
% Saturation		49.3		0.1	%		29-OCT-08	JH1	R748801
Conductivity Sat. Paste		3.30		0.03	dS m-1		29-OCT-08	JH1	R748801
SAR									
Calcium (Ca)		538		5.0	mg/L		29-OCT-08	KMCT	R748980
Potassium (K)		114		2.0	mg/L		29-OCT-08	KMCT	R748980
Magnesium (Mg)		117		3.0	mg/L		29-OCT-08	KMCT	R748980
Sodium (Na)		202		2.0	mg/L		29-OCT-08	KMCT	R748980
SAR		2.06		0.10	SAR		29-OCT-08	KMCT	R748980
Sulfur (as SO4)		1700		6	mg/L		29-OCT-08	KMCT	R748980
pH (1:2 CaCl2)		7.70		0.01	pH		30-OCT-08	CDC	R749585
L700374-6 POINT 11									
Sampled By: AB on 23-OCT-08									
Matrix: SOIL									
Glyphosate/AMPA									
Glyphosate		0.10		0.005	mg/kg		05-NOV-08	BF	R753276
AMPA		0.13		0.005	mg/kg		05-NOV-08	BF	R753276
Herbicides & Pesticides in Soil									
Surr: 2,4-D d5		90		25-175	%		03-NOV-08	BF	R751747
Surr: Treflan d14		49		25-175	%		03-NOV-08	BF	R751747
Clopyralid		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Dicamba		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Mecoprop		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
MCPA		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
2,4-D		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Bromoxynil		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Trifluralin		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Triclopyr		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Triallate		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
2,4,5-T		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Picloram		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Fluazifop-p-butyl		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Diclofop-methyl		<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
Note: Low levels of 2,4-D, MCPA and dicamba found below detection limit.									
Detailed Salinity									
Chloride (Cl)		90		20	mg/L		29-OCT-08	RZF	R748915
EC (Saturated Paste)									
% Saturation		54.7		0.1	%		29-OCT-08	JH1	R748801
Conductivity Sat. Paste		4.23		0.03	dS m-1		29-OCT-08	JH1	R748801
SAR									
Calcium (Ca)		462		5.0	mg/L		29-OCT-08	KMCT	R748980
Potassium (K)		135		2.0	mg/L		29-OCT-08	KMCT	R748980
Magnesium (Mg)		223		3.0	mg/L		29-OCT-08	KMCT	R748980
Sodium (Na)		357		2.0	mg/L		29-OCT-08	KMCT	R748980
SAR		3.41		0.10	SAR		29-OCT-08	KMCT	R748980

[illegible]

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L700374-13 CONTROL 6									
Sampled By: AB on 23-OCT-08									
Matrix: SOIL									
Glyphosate/AMPA									
Glyphosate		0.026		0.005	mg/kg		05-NOV-08	BF	R753276
AMPA		0.067		0.005	mg/kg		05-NOV-08	BF	R753276
Herbicides & Pesticides in Soil									
Surr:	2,4-D d5	89		25-175	%		03-NOV-08	BF	R751747
Surr:	Treflan d14	49		25-175	%		03-NOV-08	BF	R751747
	Clopyralid	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Dicamba	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Mecoprop	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	MCPA	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4-D	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Bromoxynil	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Trifluralin	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triclopyr	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Triallate	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	2,4,5-T	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Picloram	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Fluazifop-p-butyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
	Diclofop-methyl	<0.005		0.005	mg/kg		03-NOV-08	BF	R751747
L700374-14 CONTROL 7									
Sampled By: AB on 23-OCT-08									
Matrix: SOIL									
Glyphosate/AMPA									
Glyphosate		0.027		0.005	mg/kg		05-NOV-08	BF	R753276
AMPA		0.096		0.005	mg/kg		05-NOV-08	BF	R753276
Herbicides & Pesticides in Soil									
Surr:	2,4-D d5	93		25-175	%		04-NOV-08	BF	R751747
Surr:	Treflan d14	68		25-175	%		04-NOV-08	BF	R751747
	Clopyralid	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Dicamba	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Mecoprop	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	MCPA	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	2,4-D	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Bromoxynil	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Trifluralin	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Triclopyr	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Triallate	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	2,4,5-T	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Picloram	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Fluazifop-p-butyl	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Diclofop-methyl	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
L700374-16 CONTROL 9									
Sampled By: AB on 23-OCT-08									
Matrix: SOIL									
Glyphosate/AMPA									
Glyphosate		0.023		0.005	mg/kg		05-NOV-08	BF	R753276
AMPA		0.079		0.005	mg/kg		05-NOV-08	BF	R753276
Herbicides & Pesticides in Soil									
Surr:	2,4-D d5	110		25-175	%		04-NOV-08	BF	R751747

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters		Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L700374-16 CONTROL 9									
Sampled By: AB on 23-OCT-08									
Matrix: SOIL									
Herbicides & Pesticides in Soil									
Surr:	Treflan d14	59		25-175	%		04-NOV-08	BF	R751747
	Clopyralid	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Dicamba	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Mecoprop	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	MCPA	0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	2,4-D	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Bromoxynil	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Trifluralin	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Triclopyr	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Triallate	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	2,4,5-T	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Picloram	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Fluazifop-p-butyl	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
	Diclofop-methyl	<0.005		0.005	mg/kg		04-NOV-08	BF	R751747
Detailed Salinity									
	Chloride (Cl)	50		20	mg/L		29-OCT-08	RZF	R748915
EC (Saturated Paste)									
	% Saturation	48.0		0.1	%		29-OCT-08	JH1	R748801
	Conductivity Sat. Paste	0.78		0.03	dS m-1		29-OCT-08	JH1	R748801
SAR									
	Calcium (Ca)	103		5.0	mg/L		29-OCT-08	KMCT	R748980
	Potassium (K)	36.7		2.0	mg/L		29-OCT-08	KMCT	R748980
	Magnesium (Mg)	22.3		3.0	mg/L		29-OCT-08	KMCT	R748980
	Sodium (Na)	24.0		2.0	mg/L		29-OCT-08	KMCT	R748980
	SAR	0.56		0.10	SAR		29-OCT-08	KMCT	R748980
	Sulfur (as SO4)	89		6	mg/L		29-OCT-08	KMCT	R748980
	pH (1:2 CaCl2)	7.29		0.01	pH		30-OCT-08	CDC	R749585
* Refer to Referenced Information for Qualifiers (if any) and Methodology.									

Reference Information

Methods Listed (if applicable):

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
CL-SAR-CL	Soil	Chloride (Cl) (Saturated Paste)		APHA 4500 - Cl- - E Auto'd Ferricyanide
GLYPH/AMPA-ED	Soil	Glyphosate/AMPA		EPA 8318-HPLC/Fluorescence
GLYPH/AMPA-ED	Soil	Glyphosate/AMPA		JAFC, 1994, VOL. 42, NO. 12, 2751-2759
HERBSCR-ED	Soil	Herbicides & Pesticides in Soil		MODIFIED JAOAC, VOL. 74, NO. 3, 1991.
PH-1:2 CACL2-CL	Soil	pH (1:2 CaCl2)		CSSS 16.3 - 1:2 Extraction w/0.01M CaCl2
SALINITY-INTCHECK-CL	Soil			CSSS 18.4-Calculation
SAR-CALC-CL	Soil	SAR		CSSS 18.4-Calculation
SAT/EC-CL	Soil	EC (Saturated Paste)		CSSS, Chp. 18 - Saturation Extract
SO4-PASTE-ICP-CL	Soil	Sulphate (SO4)		AEUB Guide 58-29.7 - ICP-AES

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

08-052298 08-052299

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
CL	ALS LABORATORY GROUP - CALGARY, ALBERTA, CANADA	ED	ALS LABORATORY GROUP - EDMONTON, ALBERTA, CANADA

GLOSSARY OF REPORT TERMS

Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds. The reported surrogate recovery value provides a measure of method efficiency. The Laboratory control limits are determined under column heading D.L.

mg/kg (units) - unit of concentration based on mass, parts per million.

mg/L (units) - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.

Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.



L700374

Report to:		Report Format / Distribution		Service Requested: (rush - subject to availability)	
Company: North Shore		Standard: <input checked="" type="checkbox"/> Other: <input type="checkbox"/>		<input checked="" type="checkbox"/> Regular (Default)	
Contact: Angela Bricker		Select: PDF <input checked="" type="checkbox"/> Excel <input checked="" type="checkbox"/> Digital <input type="checkbox"/>		Priority (2-3 Business Days) - 50% Surcharge	
Address: 177.11979 1105 SE		Email 1: abricker@northshoreenv.com		Emergency (1 Business Day) - 100% Surcharge	
Phone: 728-3095		Email 2: cfox@northshoreenv.com		For Emergency < 1 Day, ASAP or Weekend - Contact ALS	
Invoice To: Same as Report? <input checked="" type="checkbox"/> Yes / No? <input type="checkbox"/>		Client / Project Information:		Analysis Request	
Company:		Job #:		(Indicate Filtered or Preserved, F/P)	
Contact:		PO / AFE:			
Address:		Legal Site Description: 1-18-17-18 W4			
Phone:		Quote #:			
Lab Work Order (Lab Use Only)		ALS Contact:		Sampler: AB	
Sample #	Sample Identification (This description will appear on the report)	Date	Time	Sample Type	Number of Containers
1	Point 6	Oct 23/08		B	
2	Point 7				
3	Point 8				
4	Point 9				
5	Point 10				
6	Point 11				
7	Point 12				
8	Point 13				
9	Point 14				
10	Point 16				
11	Control 4				
12	Control 5				
Special Instructions / Regulations / Hazardous Details					
Request for analysis to follow.					
Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.					
By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.					
SHIPMENT RELEASE (Lab Use Only)		SHIPMENT RECEPTION (Lab Use Only)		SHIPMENT VERIFICATION (Lab Use Only)	
Released by:	Date & Time:	Received by:	Date:	Temperature:	Verified by:
ABRICKER	Oct 23/08 7:15pm	CMB	10/23/08	7:16pm 11°C	
REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION					GENF 18:00 Front

Received Time Oct. 24. 2:21 PM

APPENDIX C
NORTH SHORE JULY 2008 LETTER REPORT

North Shore Environmental Consultants Inc.

July 15, 2008

BY COURIER

Husky Oil Operations Ltd.
707-8th Ave. S.W.
Box 6525, Station "D"
Calgary, AB
T2P 3G7

Attention: **Sonia Glubish, B.Sc., A.Ag.**
 Reclamation Coordinator

Re: **Surface Soil Sampling**
 01-18-017-18 W4M Lomond, Alberta

Husky Oil Operations Ltd. (Husky) retained North Shore Environmental Consultants Inc. (North Shore) to complete surface soil sampling in response to landowner concerns regarding runoff water from the Husky 01-18-07-18 W4M Armada Gas Plant onto his field located directly east of the plant across range road 18-5.

The landowner raised concerns with pesticide application on the plant site and the possibility that the runoff water had carried the pesticides into his field causing discolouration and sparse growth.

Field Work and Findings:

On June 13, 2008, North Shore met the Husky representative Allen Fefchack and the landowner Pat Honess on site. Mr. Honess pointed out the area of concern with sparse growth and discoloured vegetation along the edges of his wheat field. The area of concern is located in the far southwest corner of LSD 04-17-017-18 W4M adjacent to Range Road 18-5 and Secondary Highway 539. The Husky 1-18 gas plant is located approximately 30 m west across Range Road 18-5 from the area of concern.

North Shore observed standing water, stressed vegetation (yellowish brown discoloured wheat) and sparse growth in the area of concern. Standing water was also observed along the east boundary of the Husky plant in the west ditch of range road 18-5. Erosion rills were observed on range road 18-5 between the west and east ditches.

The area of concern measures approximately 155 m long and 15 m wide running north-south along the east side of 18-5 and approximately 160 m long and 15 m wide along the north side of highway 539. North Shore collected five discrete soil samples from within the area of concern and three control samples located outside of the area of concern. North Shore completed a site sketch and documented the area with photographs

GPS coordinates were collected using a hand held Garmin GPS with +/- 4.0 m accuracy using UTM coordinates in NAD 83. Please refer to Figure 1 for the scaled site diagram, and Appendix A for photographs.

Laboratory Analytical Results

Soil samples were submitted to ALS Laboratory Group (ALS) in Calgary on June 13, 2008. Point samples 2 and 5 were selected for herbicide, sterilant, salinity, nutrient, particle size and hydrocarbon analyses. Control sample 2 was selected for salinity, nutrient (NPKS) and particle size analyses.

Laboratory analyses reported that hydrocarbon concentrations met Tier 1 Guidelines. Two samples (Control 2 and Point 3) had electrical conductivity (EC) and sodium adsorption ration (SAR) values rated as 'good' according to AENV 2001 Guidelines. One sample (Point 5) had EC and SAR values rated 'fair' according to AENV 2001 Guidelines. Particle size analysis classified the soils as being fine grained.

Laboratory analyses also reported that samples Point 3 and Point 5 had detectable concentrations of certain herbicides. Point 3 had detectable concentrations of AMPA, Diuron, 2,4-D, Treflan, Dicamba and MCPA. The MCPA concentration exceeds Tier 1 Guidelines.

Soil sample Point 5 had detectable concentrations of Glyphosate, AMPA, Diuron, DCPMU, 2,4-D, Treflan, Dicamba, MCPA. The Glyphosate concentration exceeds Tier 1 Guidelines.

North Shore has requested additional analyses on the control samples and will provide a summary of results upon the receipt of the laboratory data.

Please feel free to contact me at (403) 228-3095 with any questions or concerns.

Sincerely,

North Shore Environmental Consultants Inc.

Per:

Ryan Cox, C.Tech., A.T.T.
Environmental Consultant

encl.

Attachments:

Table 1 – Laboratory Analytical Results

Figure 1 – Site Location Map

Figure 2 – Aerial Photo

Figure 3 – Site Diagram

Appendix A – Site Photographs

TABLE

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
01-18-017-18 W4M
SURFACE SOIL SAMPLING
HUSKY ENERGY

Parameters	Units	13-Jun-08			Guidelines ¹		
		Control 2	Point 3	Point 5	Criteria	Year	Value
		0-0.15m	0-0.15m	0-0.15m			
Hydrocarbon Analyses							
Benzene	mg/kg		<0.005	<0.005	AENV	2007	0.046
Toluene	mg/kg		<0.01	<0.01	AENV	2007	0.52
Ethylbenzene	mg/kg		<0.01	<0.01	AENV	2007	0.11
Total Xylenes (o, m & p)	mg/kg		<0.01	<0.01	AENV	2007	15
F1 (C ₆ to C ₁₀)-(BTEX) ²	mg/kg		<5	<5	AENV	2007	210
F2 (C ₁₁ to C ₁₆)	mg/kg		<5	<5	AENV	2007	150
F3 (C ₁₇ to C ₃₄)	mg/kg		100	75	AENV	2007	1300
F4 (>C ₃₄) ³	mg/kg		57	40	AENV	2007	5600
Soil Moisture	%		26	19	NC	NC	NC
Chromatogram Interpretation⁴			Indistinguishable	Indistinguishable	NC	NC	NC
Routine							
pH	pH-unit	6.88	7.24	7.64	AENV	2007	6 - 8.5
Electrical Conductivity (EC)	dS/m	1.62	1.01	<u>6.71</u>	AENV	2001	<2
Sodium Adsorption Ratio (SAR)	Ratio	1.62	1.41	<u>8.19</u>	AENV	2001	<4
Saturation	%	50.7	44.7	58.0	NC	NC	NC
Soil Nutrients							
Available Nitrate-N	mg/kg	1.8	1.8	10.2	NC	NC	NC
Available Phosphate-P	mg/kg	28	57	31	NC	NC	NC
Available Potassium	mg/kg	535	462	408	NC	NC	NC
Available Sulfate-S	mg/kg	113	33	1150	NC	NC	NC
Soluble Salts							
Calcium (Ca)	mg/L	195	116	416	NC	NC	NC
Magnesium (Mg)	mg/L	48.6	24.0	350	NC	NC	NC
Sodium (Na)	mg/L	97.8	63.9	937	NC	NC	NC
Potassium (K)	mg/L	41.5	36.6	55.2	NC	NC	NC
Sulphate (SO ₄)	mg/L	804	297	4170	NC	NC	NC
Chloride (Cl)	mg/L	<20	<20	70	NC	NC	NC
Pesticides							
Glyphosate	mg/kg		<0.005	<u>0.52</u>	AENV	2007	0.054
AMPA	mg/kg		0.090	0.21	NC	NC	NC
Sterilants							
Atrazine	mg/kg		<0.0005	<0.0005	AENV	2007	0.0088
Bromacil	mg/kg		<0.0005	<0.0005	NC	NC	NC
Diuron	mg/kg		0.00735	0.0084	AENV	2007	1.9
DCPMU	mg/kg		<0.0005	0.016	NC	NC	NC
Simazine	mg/kg		<0.0005	<0.0005	AENV	2007	0.033
Tebuthiuron	mg/kg		<0.0005	<0.0005	AENV	2007	0.12
Herbicides							
2,4-D d5	mg/kg		93	119	NC	NC	NC
Treflan d14	mg/kg		98	121	NC	NC	NC
Clopyralid	mg/kg		<0.005	<0.005	NC	NC	NC
Dicamba	mg/kg		0.033	0.008	AENV	2007	0.12
Mecoprop	mg/kg		<0.005	<0.005	NC	NC	NC
MCPA	mg/kg		<u>0.021</u>	0.011	AENV	2007	0.02
2,4-D	mg/kg		<0.005	0.018	AENV	2007	0.1
Bromoxynil	mg/kg		<0.005	<0.005	AENV	2007	0.044
Trifluralin	mg/kg		<0.005	<0.005	AENV	2007	0.038
Triclopyr	mg/kg		<0.005	<0.005	NC	NC	NC
Triallate	mg/kg		<0.005	<0.005	AENV	2007	0.0077
2,4,5-T	mg/kg		<0.005	<0.005	NC	NC	NC
Picloram	mg/kg		<0.005	<0.005	AENV	2007	0.024
Fluazifop-p-butyl	mg/kg		<0.005	<0.005	NC	NC	NC
Diclofop-methyl	mg/kg		<0.005	<0.005	AENV	2007	0.059
Particle Size Analysis							
Fine <75µ	%	65	65	64	NC	NC	NC
Coarse >75µ	%	35	35	36	NC	NC	NC
Texture		Fine	Fine	Fine	NC	NC	NC

Notes:

¹ Alberta Environment. 2001. Salt Contamination Assessment and Remediation Guidelines. These guidelines are for topsoil (A horizons on the control area)

Alberta Environment. 2007. Alberta Tier 1 Soil and Groundwater Remediation Guidelines. These standards are for fine textured surface soil under agricultural land use for all exposure pathways.

² Fraction 1 petroleum hydrocarbons (C6-C10) minus benzene, toluene, ethylbenzene and xylene concentrations.

³ Fraction 4 petroleum hydrocarbons (C34-C50 or >C34) as determined by high temperature gas chromatography.

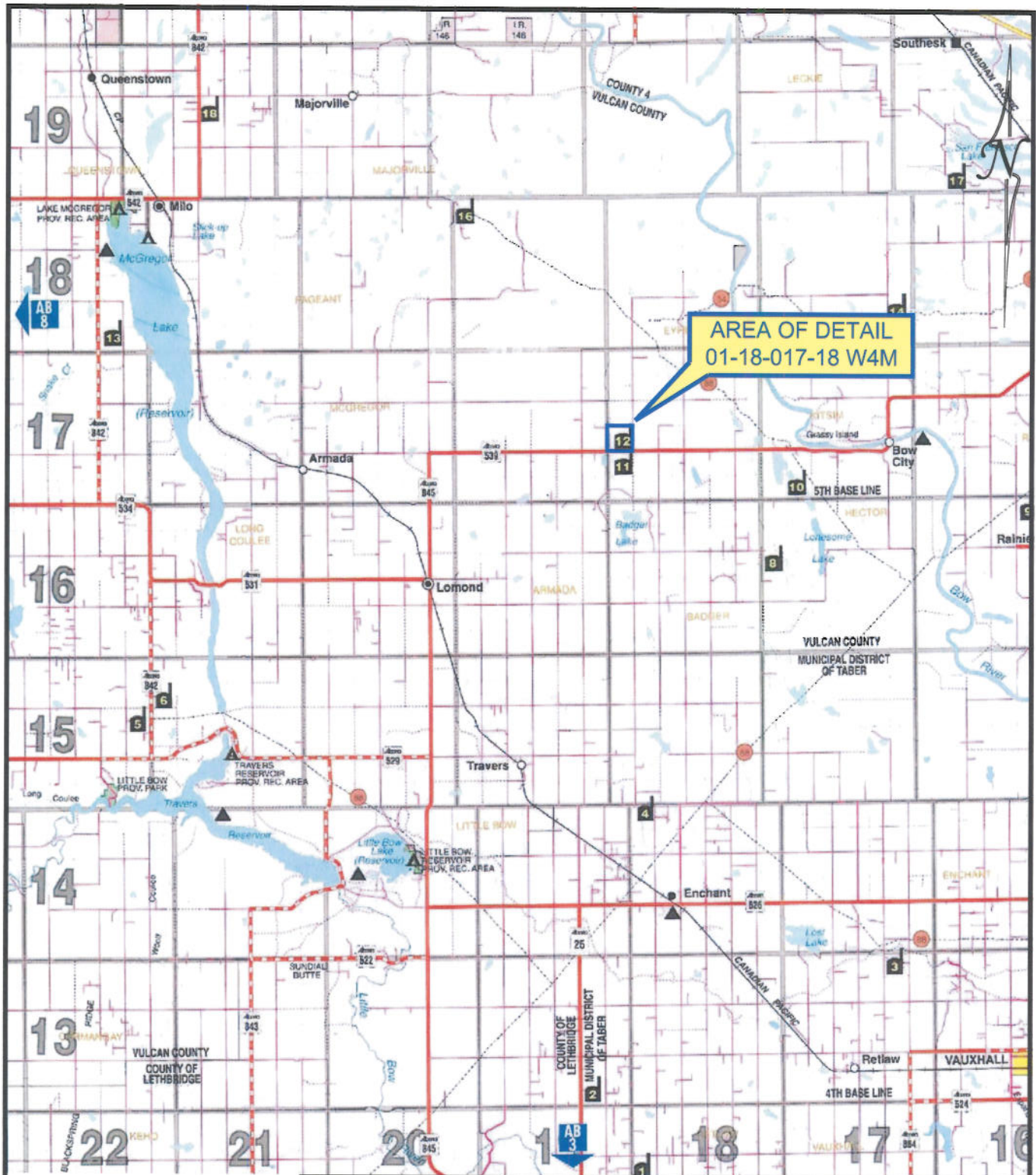
⁴ Interpreted by North Shore unless otherwise indicated.

NC - No Criteria Established

Blank - Greater than applicable guidelines.

blank - not analysed

FIGURES



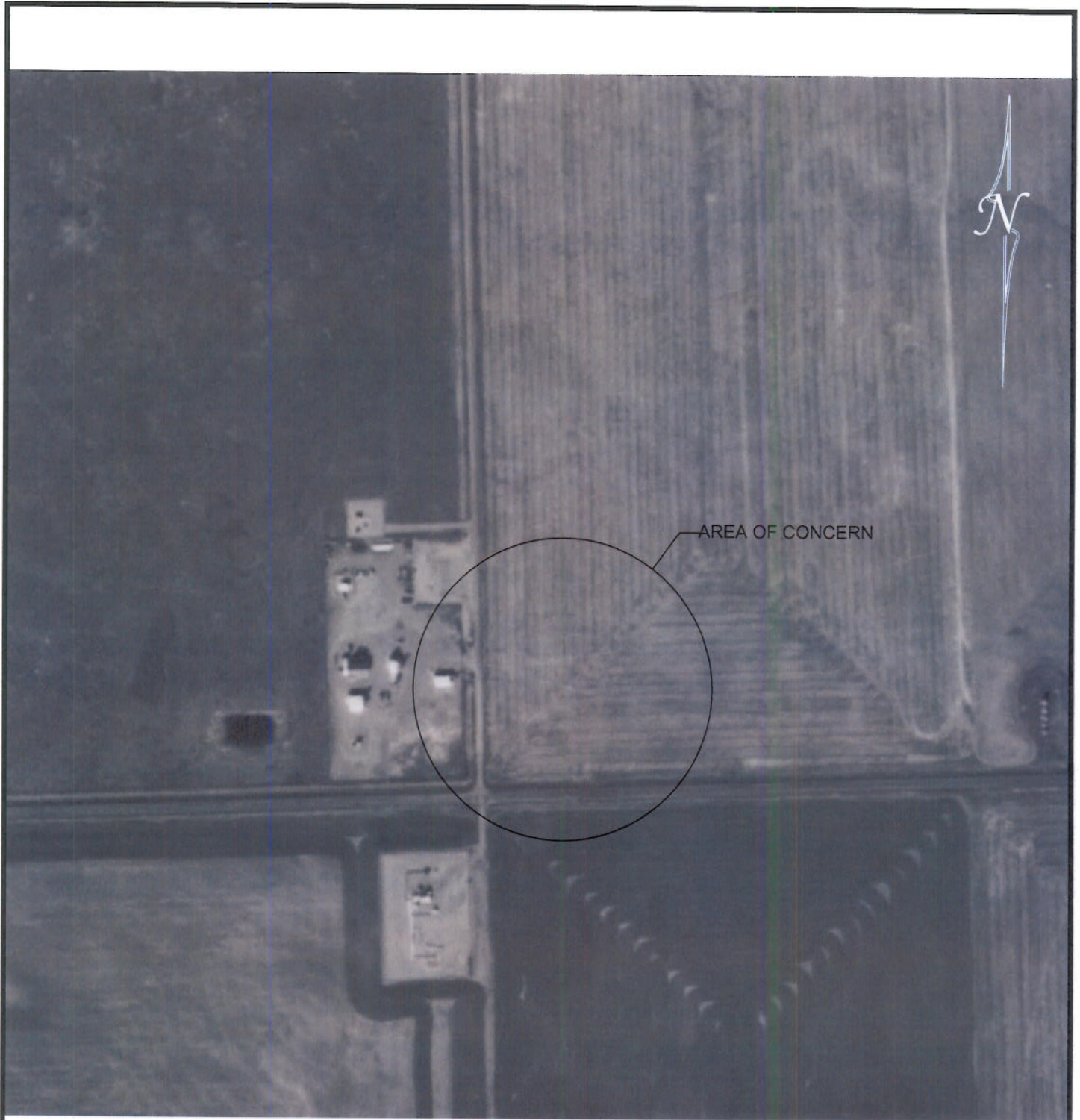
0 5 10 15
SCALE IN KILOMETERS


NORTH SHORE
Environmental Consultants
#143, 201 Kaska Road
Sherwood Park, AB
T8A 2J6

HUSKY ENERGY
01-18-017-18 W4M
KEY MAP

Date: JULY 2008	Drawn By: JV	Checked by: RC	Figure: 1 OF 2
North Shore File #: E0003355	Scale: 1:350 000	Revision #: 00	

***BASE MAP DERIVED FROM CANADIAN OIL ATLAS**

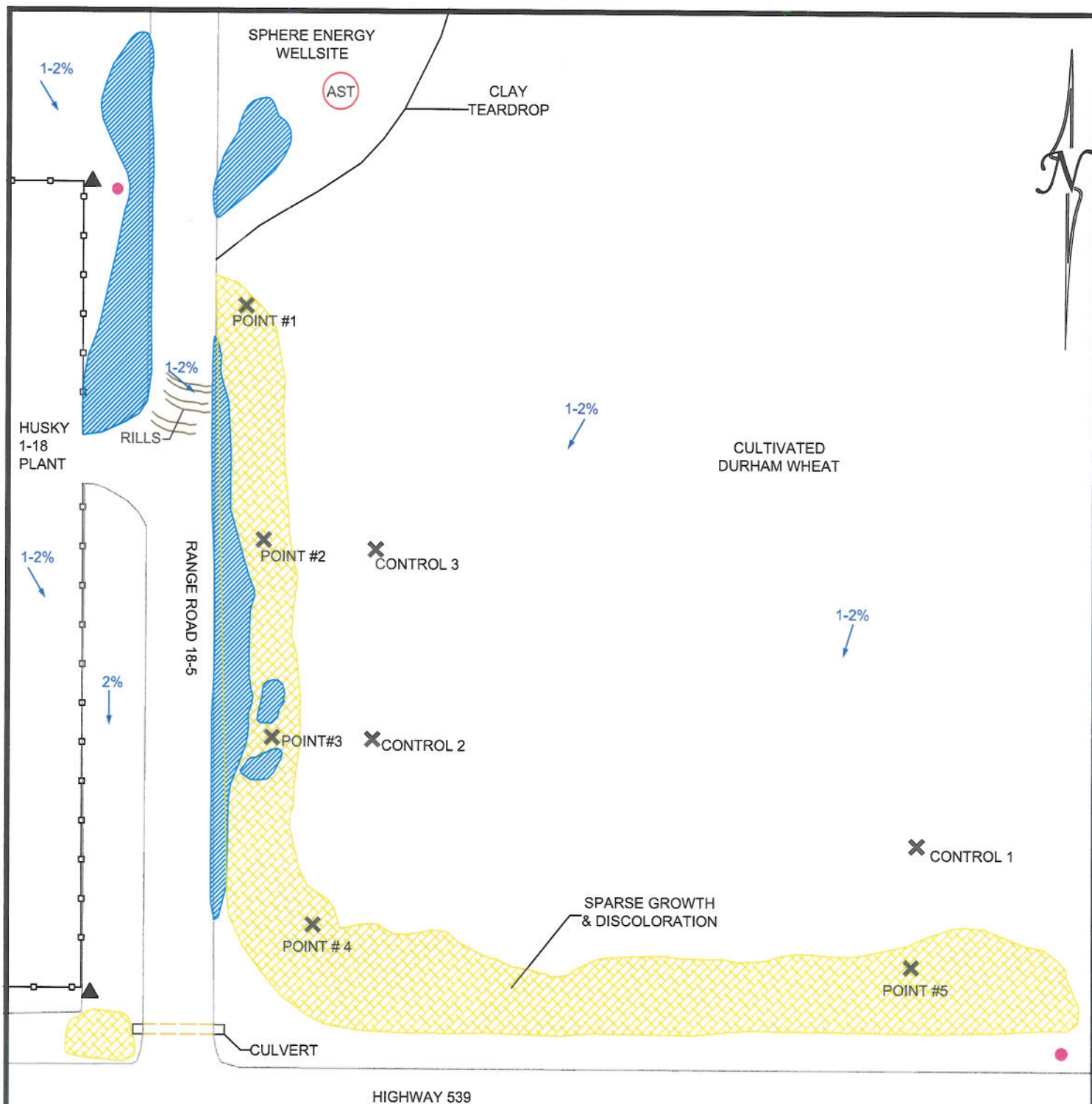


0 50 100 200
SCALE IN METERS




NORTH SHORE
Environmental Consultants
#143, 201 Kaska Road
Sherwood Park, AB
T8A 2J6

HUSKY ENERGY
01-18-017-18 W4M
AERIAL PHOTO AS#5008- 1999

Date: JULY 2008	Drawn By: JV	Checked by: RC	Figure: 2 OF 3
North Shore Job #: E0003355	Scale: 1:5000	File Name: 01-18-17-18 W4-Fg2	



LEGEND

-  SURVEY MARKER
-  POWER POLE
-  FENCE LINE
-  SAMPLE POINTS
-  SLOPE DIRECTION
-  STANDING WATER

NORTH SHORE
Environmental Consultants

#143, 201 Kaska Road
Sherwood Park, AB
T8A 2J6

HUSKY ENERGY

01-18-017-18 W4M
SITE SHOWING SAMPLE LOCATIONS

Date:	Drawn By:	Checked by:	Figure:
JULY 2008	JV	RC	3 OF 3
North Shore File #: E0003355	Scale: 1:1000	Revision #: 00	

APPENDIX A
SITE PHOTOGRAPHS



Photo 1: View of sign at entrance to gas plant, note standing water at entrance.



Photo 2: Looking north along range road 18-5, note the Sphere Energy wellsite in the upper right portion of the photo.



Photo 3: View of discoloured crop looking north along the east side of range road 18-5.



Photo 4: View of discoloured crop looking south along east edge of range road 18-5.



Photo 5: Close up view of discoloured wheat.



Photo 6: View of sparse growth at the SW corner of the field, looking east along highway 539.