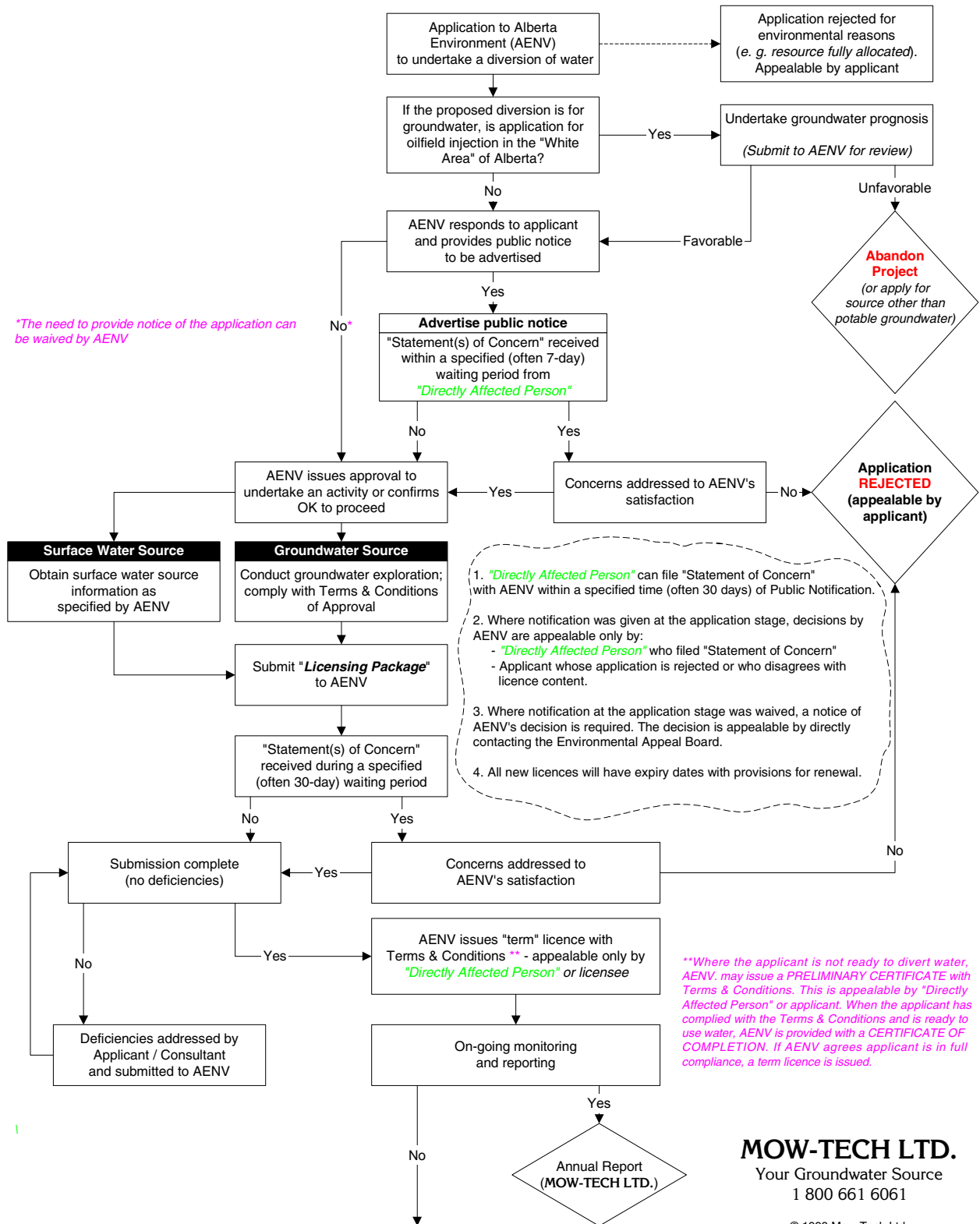


Water Act – Flowchart



MOW-TECH LTD.
Your Groundwater Source
1 800 661 6061

© 1999 Mow-Tech Ltd.

This flow chart was developed by Mow-Tech Ltd. and is provided as a guide only to Alberta's new Water Act. Mow-Tech Ltd. accepts no responsibility for the information provided.



Interpretation of Chemical Analysis of Drinking Water



Stony Plain - Lac Ste. Anne Health Unit

HEAD OFFICE
P.O. Box 210
Stony Plain, Alberta
Canada T0E 2G0
Telephone: 963-2206
Fax: 963-7612

SUB-OFFICES
Box 4323
Spruce Grove, Alberta
T7X 3B5
Telephone: 962-4072

163 Provincial Bldg.
Whitecourt, Alberta
T0E 2L0
Telephone: 778-5555
Fax: 778-3852

Box 430
Fox Creek, Alberta
T0H 1P0
Telephone: 622-3730

HOME CARE:
Box 210
Stony Plain, Alberta
T0E 2G0
Telephone: 963-3366

INTERPRETATION OF CHEMICAL ANALYSIS OF DRINKING WATER

1. TOTAL DISSOLVED SOLIDS (TDS) - The recommended limit is 1000 mg/L for untreated and 500 mg/L for treated waters. TDS indicates the approximate organic and inorganic substances in the water. It will be high if other components of the analysis are high.
2. IRON - Amounts over 0.3 mg/L, usually stain laundry and plumbing fixtures and cause undesirable tastes. Iron filtration can be utilized. Iron bacteria may also be the cause of increased iron content.
3. CALCIUM - This is a constituent of hardness. Excessive calcium in drinking water may be a factor in disorders of the kidneys, bladder and urinary system.
4. MAGNESIUM - This is a constituent of hardness.
5. HARDNESS - A maximum acceptable concentration has not been established. Hardness is caused mainly by calcium and magnesium. Levels between 80 and 100 mg/L are satisfactory; 100 to 200 mg/L are less acceptable; more than 200 mg/L are considered to be poor and in excess of 500 mg/L are unacceptable for most domestic purposes. Softening can be helpful in given circumstances.
6. SODIUM - Ideally, there should be no more than 200mg/L. The average intake of sodium from water is only a small fraction of that consumed in a normal diet. Persons suffering from hypertension or congestive heart failure may require a sodium-restricted diet, in which case the intake of sodium from drinking water could become significant. Your physician should be informed of the sodium content.
7. NITRITE-NITROGEN & NITRATE-NITROGEN (NO₂ + NO₃) - The maximum acceptable concentration is 10 mg/L. Any amount over that may be harmful to children up to 12 months of age, causing a condition known as methaemoglobinaemia. Presence may indicate a contaminating source although other instances, e.g. fertilizer and decomposing vegetation can cause an elevated figure.
8. NITRITE-NITROGEN - The maximum acceptable concentration is 1.0 Mg/L. Nitrite is unstable in water and converts to nitrate. An elevated figure may indicate a pollution problem.
9. FLUORIDE - Approximately 1 mg/L of fluoride is recommended in drinking water in order to give developing teeth some protection against decay. If the fluoride is higher than 1.5 mg/L you should talk to the dental staff of the Health Unit about the possibility of mottled enamel; if the fluoride is lower than 0.7 mg/L please ask about fluoride supplements for your children.
10. SULPHATE - The maximum acceptable concentration is 500 mg/L. Taste becomes noticeable between 250 and 600 mg/L and a laxative effect may be noticed by new users when sulphate combines with sodium or magnesium.

-2-

11. CHLORIDE - The recommended limit is 250 mg/L. Chloride content is usually low and an increase may indicate a nearby source of pollution (particularly if NO₂ and NO₃ and nitrite are high). Some wells contain naturally occurring chlorides. A salty taste may be evident.
12. ALKALINITY T (Total) - Alkalinity below 500 mg/L is generally accepted. Excessive alkalinity may result in incrustations on utensils, service pipes and water heaters.
13. BICARBONATE - Upper limit not established. Relates to alkalinity as bicarbonate of sodium, calcium and magnesium.

NOTE: mg/L = milligrams per litre.

The preceding notes and standards are for your guidance only based on an intake of 2 litres of water per day. The figures may be interpreted in a variety of ways and the public health inspector for your area can be contacted for further advice.

Telephone: Stony Plain - 963-2206; Spruce Grove - 962-4072; Whitecourt - 778-5555.

For stock water and other agricultural uses the requirements are not necessarily the same as for domestic use. Please consult your District Agriculturalist for that kind of advice.

Additional Information

VIDEOS

Will the Well Go Dry Tomorrow? (Mow-Tech Ltd.: 1-800 GEO WELL)
Water Wells that Last (PFRA – Edmonton Office: 780-495-3307)
Ground Water and the Rural Community (Ontario Ground Water Association)

BOOKLET

Water Wells that Last (PFRA – Edmonton Office: 780-495-3307)

ALBERTA ENVIRONMENT

WATER WELL INSPECTORS

Jennifer McPherson (Edmonton: 780-427-6429)

GEOPHYSICAL INSPECTION SERVICE

Edmonton: 780-427-3932

COMPLAINT INVESTIGATIONS

Blair Stone (Red Deer: 403-340-5310)

UNIVERSITY OF ALBERTA – Department of Earth and Atmospheric Sciences - Hydrogeology

Carl Mendoza (Edmonton: 780-492-2664)

UNIVERSITY OF CALGARY – Department of Geology and Geophysics - Hydrogeology

Larry Bentley (Calgary: 403-220-4512)

FARMERS ADVOCATE

Paul Vasseur (Edmonton: 780-427-2433)

PRAIRIE FARM REHABILITATION ADMINISTRATION

Tony Cowen (Edmonton: 780-495-4911)
Keith Schick (Vegreville: 780-632-2919)

LOCAL HEALTH DEPARTMENTS

WATER WELLS RECOMMENDED FOR FIELD VERIFICATION

Owner	Location	Aquifer Name	Date Water Well Drilled	Completed Metres	Depth Feet	NPWL Metres	NPWL Feet	UID
Adamson, Marvin	01-04-051-20 W4M	Lower Horseshoe Canyon	12-May-76	45.7	150.0	18.3	60.0	M36234.940377
Akley Design	NE 06-051-21 W4M	Upper Surficial	01-Sep-79	18.9	62.0	15.9	52.0	M36234.939995
Alberta Department of Highways	NE 11-053-22 W4M	Bearpaw	01-May-62	28.7	94.0	4.4	14.5	M36234.938124
Alberta Environment	13-30-056-20 W4M	Upper Surficial	27-Mar-85	10.1	33.0	5.8	19.0	M35377.173265
Alberta Environment	13-30-056-20 W4M	Upper Surficial	27-Mar-85	10.1	33.0	5.8	19.0	M35377.173275
Alberta Government Services	SE 21-052-23 W4M	Upper Surficial	10-Mar-81	25.0	82.0	6.4	21.0	M36234.942005
Andruchow, E	NE 11-056-21 W4M	Lower Surficial	17-Aug-84	42.4	139.0	29.0	95.0	M35377.055095
Amdt, Gerald	SE 21-052-22 W4M	Lower Horseshoe Canyon	04-Dec-80	41.2	135.0	12.2	40.0	M36234.938478
Baker, Gerald	09-25-052-22 W4M	Bearpaw	17-Jul-80	56.4	185.0	8.5	28.0	M36234.938641
Baldt, Henry	SW 18-052-22 W4M	Lower Horseshoe Canyon	18-May-73	75.3	247.0	9.1	30.0	M36234.938308
Barrow, Dale	NW 23-052-22 W4M	Lower Horseshoe Canyon	24-Jul-79	61.0	200.0	22.9	75.0	M36234.938568
Bartel, Richard	NE 34-054-22 W4M	Oldman	21-Nov-88	42.7	140.0	24.4	80.0	M35377.231871
Basaraba, Maria	NW 30-053-21 W4M	Bearpaw	29-May-82	39.0	128.0	21.9	72.0	M36234.943452
Bath, R.	16-16-052-23 W4M	Upper Surficial	17-Mar-77	27.4	90.0	11.0	36.0	M36234.941890
Berg, Roy	08-01-051-21 W4M	Lower Horseshoe Canyon	24-Mar-81	61.0	200.0	27.7	91.0	M36234.939904
Berg, Ted	05-27-054-21 W4M	Bearpaw	31-Jul-71	34.4	113.0	6.7	22.0	M36234.945119
Berlin, Bernard	10-20-051-22 W4M	Lower Horseshoe Canyon	09-Aug-78	22.9	75.0	4.6	15.0	M36234.939476
Berry, Peter	NW 01-054-21 W4M	Bearpaw	28-Jun-76	51.8	170.0	13.7	45.0	M36234.944805
Best, Everett	SE 02-054-21 W4M	Bearpaw	13-Sep-75	57.9	190.0	15.2	50.0	M36234.944828
Beter, Paul	13-16-053-22 W4M	Upper Surficial	13-Jun-84	17.1	56.0	6.1	20.0	M36234.938225
Beutler, Otto	SE 08-051-22 W4M	Lower Horseshoe Canyon	08-Jun-81	14.6	48.0	4.9	16.0	M36234.939686
Biffert, R.	NE 01-053-22 W4M	Bearpaw	09-May-79	27.4	90.0	1.8	6.0	M36234.937888
Birch Bay Ranch	SW 32-051-21 W4M	Lower Horseshoe Canyon	30-Mar-84	39.6	130.0	5.8	19.0	M36234.940244
Bitter, M.	06-35-052-22 W4M	Upper Surficial	01-Jun-79	32.0	105.0	11.6	38.0	M36234.941606
Bjomson, John	NW 09-051-21 W4M	Lower Horseshoe Canyon	10-May-82	18.3	60.0	4.6	15.0	M36234.940080
Black, Leonard	SE 30-052-22 W4M	Bearpaw	09-Jun-72	67.1	220.0	13.7	45.0	M36234.943547
Blair, Doug	07-02-051-22 W4M	Lower Horseshoe Canyon	11-Jul-79	36.6	120.0	12.8	42.0	M36234.939578
Boisvert, Emile	16-30-052-22 W4M	Lower Horseshoe Canyon	21-Jun-79	67.1	220.0	22.9	75.0	M36234.943629
Bonowicz, Joe	01-16-054-22 W4M	Upper Surficial		9.1	30.0	1.5	5.0	M35377.231598
Bonowicz, Joe	SE 16-054-22 W4M	Oldman	03-Nov-88	61.0	200.0	10.7	35.0	M35377.231601
Booth, Terry	NW 03-051-21 W4M	Lower Horseshoe Canyon	21-May-80	21.3	70.0	13.7	45.0	M36234.939915
Bowerman, B.	NW 10-051-21 W4M	Lower Horseshoe Canyon	13-Mar-62	42.7	140.0	13.7	45.0	M36234.940100
Bowls, D.	01-10-051-22 W4M	Lower Horseshoe Canyon	02-Aug-79	46.3	152.0	9.1	30.0	M36234.939198
Briggs, G.	SW 02-052-23 W4M	Upper Surficial	01-May-78	22.9	75.0	3.1	10.0	M36234.941467
Brown, Cameron	15-16-052-21 W4M	Lower Horseshoe Canyon	29-Oct-80	39.6	130.0	9.1	30.0	M36234.946041
Buchko, Richard	NE 04-051-21 W4M	Lower Horseshoe Canyon	12-Jun-85	21.3	70.0	1.8	6.0	M36234.939955
Budjak, Michael N.	NE 34-052-22 W4M	Lower Horseshoe Canyon	14-Aug-80	32.0	105.0	6.7	22.0	M36234.941587
Buksa, Elvira	03-24-052-21 W4M	Bearpaw	08-Oct-82	61.0	200.0	2.4	8.0	M36234.946259
Bunnage, Judd	NE 33-052-22 W4M	Lower Horseshoe Canyon	06-Jun-77	32.0	105.0	4.6	15.0	M36234.941513
Burghoff, Karl	SW 13-052-23 W4M	Upper Surficial	24-Jun-77	42.7	140.0	13.7	45.0	M36234.941741
Burnett, Bill	NW 26-053-21 W4M	Bearpaw	30-Sep-81	48.8	160.0	14.6	48.0	M36234.943315
Burns, Marie	NE 36-052-22 W4M	Lower Horseshoe Canyon	24-Feb-77	41.2	135.0	6.4	21.0	M36234.941713
Burton, John	SE 31-052-22 W4M	Upper Surficial	18-Oct-72	47.2	155.0	12.8	42.0	M36234.943656
Butler, Bill	12-02-052-23 W4M	Upper Surficial	29-May-81	9.8	32.0	2.1	7.0	M36234.941471

WATER WELLS RECOMMENDED FOR FIELD VERIFICATION

Owner	Location	Aquifer Name	Date Water Well Drilled	Completed Depth		NPWL		UID
				Metres	Feet	Metres	Feet	
Bykewteh, Orest	NE 30-052-22 W4M	Upper Surficial	14-Sep-81	14.6	48.0	6.1	20.0	M36234.943635
Campbell Town Baptist Church	03-06-053-22 W4M	Bearpaw	19-Jul-79	61.6	202.0	24.7	81.0	M36234.938022
Carlson Realty Ltd.	SW 34-052-22 W4M	Bearpaw	2-Nov-74	53.3	175.0	10.7	35.0	M36234.941558
Chesnich, Alex	SW 05-051-20 W4M	Upper Surficial	1-Jul-72	21.0	69.0	6.1	20.0	M36234.940396
Chimera, Walter	NW 08-054-22 W4M	Oldman	22-Sep-83	61.0	200.0	18.3	60.0	M35377.231466
Chisholm, Bruce	NE 34-051-21 W4M	Lower Horseshoe Canyon	10-Jun-78	27.4	90.0	3.1	10.0	M36234.940284
Chrenek Developments	SW 15-052-23 W4M	Upper Surficial	26-Nov-79	24.4	80.0	5.9	19.5	M36234.941801
Christensen, Bob	SW 03-051-20 W4M	Lower Horseshoe Canyon	15-Jun-76	45.7	150.0	17.1	56.0	M36234.940366
Churchill, Beverley	07-35-053-21 W4M	Bearpaw	22-Jun-77	59.4	195.0	18.3	60.0	M36234.943496
Clarke, James	NW 16-051-20 W4M	Lower Horseshoe Canyon	4-Sep-79	63.1	207.0	6.1	20.0	M36234.940571
Clyne, Jim & Jean	12-16-053-21 W4M	Upper Surficial	27-Oct-81	19.5	64.0	4.6	15.0	M36234.943105
Colvin, Jim	13-16-051-20 W4M	Upper Surficial	25-Nov-80	30.5	100.0	7.6	25.0	M36234.940574
Conley Const	04-03-054-21 W4M	Bearpaw	5-Jun-79	48.8	160.0	4.9	16.0	M36234.944856
Cooke, John	SW 21-052-21 W4M	Lower Horseshoe Canyon	2-Aug-79	42.7	140.0	4.3	14.0	M36234.946176
County of Strathcona	13-32-054-21 W4M	Oldman	26-Mar-74	61.0	200.0	18.9	62.0	M36234.945163
County of Strathcona	SE 04-052-22 W4M	Lower Horseshoe Canyon	25-Aug-75	70.1	230.0	13.7	45.0	M36234.947612
Crakim Holdings Ltd.	SE 35-053-21 W4M	Bearpaw		53.3	175.0	11.8	38.7	M36234.943502
Crowell, Keith	NE 10-051-22 W4M	Lower Horseshoe Canyon	25-Apr-80	39.6	130.0	15.2	50.0	M36234.939240
Crummer, D.	NW 16-053-22 W4M	Bearpaw	5-Jun-75	70.1	230.0	10.7	35.0	M36234.938224
Daily, Rocky	NE 01-054-21 W4M	Bearpaw	26-Nov-73	56.4	185.0	17.7	58.0	M36234.944819
Daly, Ethel	NE 31-052-22 W4M	Bearpaw	15-Jun-65	67.1	220.0	14.0	46.0	M36234.943708
Dannacker, Keith	NE 10-051-22 W4M	Lower Horseshoe Canyon	5-Jul-76	21.3	70.0	11.6	38.0	M36234.939216
Davis, Dick	16-34-052-22 W4M	Lower Horseshoe Canyon	6-Apr-78	33.5	110.0	9.8	32.0	M36234.941583
Davis, Fred	SW 13-052-21 W4M	Lower Horseshoe Canyon	8-Jun-78	27.4	90.0	4.6	15.0	M35377.076635
Davison, Herb	NW 18-052-22 W4M	Lower Horseshoe Canyon	10-Oct-79	38.1	125.0	6.1	20.0	M36234.938340
Davy, Robert	NW 18-052-22 W4M	Lower Horseshoe Canyon	6-Oct-77	64.0	210.0	20.7	68.0	M36234.938336
Dekleyne, Harry	SE 21-052-21 W4M	Lower Horseshoe Canyon	17-Mar-83	30.5	100.0	7.3	24.0	M36234.946158
Diehl, David	11-32-052-22 W4M	Bearpaw	10-Oct-84	73.5	241.0	29.0	95.0	M36234.943774
Dilworth, Jack	15-29-052-22 W4M	Lower Horseshoe Canyon	3-Dec-75	45.7	150.0	19.8	65.0	M36234.943519
Dimitroff, Paul	SE 31-052-22 W4M	Bearpaw	19-Apr-72	73.2	240.0	15.2	50.0	M36234.943661
Dionne, Raymond	05-32-052-22 W4M	Lower Horseshoe Canyon	14-Mar-72	68.6	225.0	22.9	75.0	M36234.943736
Dittrich, Leo	16-34-053-21 W4M	Bearpaw	19-Jun-75	42.7	140.0	3.7	12.0	M36234.943490
Dmytriw, Marvin	NW 25-052-22 W4M	Lower Horseshoe Canyon	5-Dec-73	50.3	165.0	19.8	65.0	M36234.938627
Doll, Rita	NW 04-051-21 W4M	Lower Horseshoe Canyon	5-Jun-81	39.6	130.0	9.8	32.0	M36234.939951
Dougall, S.	05-28-052-22 W4M	Lower Horseshoe Canyon	8-Nov-78	34.4	113.0	10.4	34.0	M36234.942463
Dubyk, J.	NE 03-053-22 W4M	Bearpaw	23-Jul-74	39.0	128.0	1.4	4.6	M36234.937951
Duff, Don	16-19-055-20 W4M	Upper Surficial	1-Nov-73	30.5	100.0	12.5	41.0	M36234.945547
Dunlop, Al	NW 20-052-21 W4M	Lower Horseshoe Canyon	8-Jun-76	44.2	145.0	1.5	5.0	M36234.946137
Dutchack, Bill	10-31-052-22 W4M	Upper Surficial	15-May-75	31.7	104.0	9.1	30.0	M36234.943699
Dykstra, A.	SE 18-052-21 W4M	Lower Horseshoe Canyon	1-Aug-69	47.2	155.0	16.8	55.0	M36234.946051
Eastman, John	NE 13-054-21 W4M	Bearpaw	9-Jul-85	30.5	100.0	6.4	21.0	M36234.944999
Ebony Homes Ltd.	12-18-052-21 W4M	Upper Surficial	18-Jun-80	19.8	65.0	4.9	16.0	M35377.050334
Ebony Homes Ltd.	NE 33-052-22 W4M	Lower Horseshoe Canyon	4-May-78	30.5	100.0	7.6	25.0	M36234.941530
Ede, William	NE 19-055-21 W4M	Lower Surficial	23-Jul-75	38.1	125.0	34.8	114.0	M36234.945816
Esso Resource Canada Ltd.	07-25-056-21 W4M	Upper Surficial	20-Aug-84	14.6	48.0	6.1	20.0	M35377.055711
Ewanchuk, Alvin	14-15-053-22 W4M	Bearpaw	14-Jun-76	33.5	110.0	8.2	27.0	M36234.938215