

RECLAMATION LEGISLATION AND CERTIFICATION REQUIREMENTS

PROVINCE OF SASKATCHEWAN

AS OF APRIL, 1985.

GARY DOUGLAS

THERE IS NO RECLAMATION LEGISLATION OR CERTIFICATION PROCESSES "PER SE" TO DATE IN THE PROVINCE OF SASKATCHEWAN.

THERE ARE, HOWEVER, "RECLAMATION GUIDELINES" IN PLACE IN THE PROVINCE, AND IF THEY ARE NOT ADHERED TO IT IS REASONABLE TO PREDICT THAT LEGISLATION WILL BECOME A REALITY.

BEFORE DISCUSSING THE GUIDELINES PERHAPS IT MAY BE OF INTEREST TO OUTLINE THE EXTENT OF THE COAL RESERVES AND THE COAL MINING INDUSTRY IN GENERAL, IN SASKATCHEWAN.

NEARLY ALL OF THE COAL RESOURCES ARE TO THE SOUTH, RUNNING PARALLEL TO THE U.S. - CANADIAN BORDER. THESE KNOWN LIGNITE RESOURCES CONSIST OF AN IMMEDIATE INTEREST OF 1 1/2 BILLION TONS, A POTENTIAL INTEREST OF SIX BILLION TONS AND A FUTURE INTEREST OF 27 BILLION TONS, GIVING A TOTAL RESOURCE IN THE ORDER OF 33 - 35 BILLION TONS.

THE VAST MAJORITY OF THE COAL IS IN THE RAVENSCRAG FORMATION, WHICH IS AN EXTENSION OF THE FORT UNION FORMATION OF THE UNITED STATES INVOLVING THE COAL DEPOSITS OF NORTH DAKOTA, MONTANA AND WYOMING.

SPECIFICALLY, THE MAJORITY OF THE SASKATCHEWAN COAL IS LOCATED IN THE SHAUNAVON AREA, IN THE SOUTH WEST, THE WILLOW BUNCH AREA IN SOUTH CENTRAL SASKATCHEWAN AND THE ESTEVAN AREA TO THE SOUTH EAST. THERE ARE SOME SIMILAR DEPOSITS IN THE NORTHERN PART OF THE PROVINCE, MOST NOTABLY NEAR LA RONGE, BUT THESE ARE NOT OF THE SAME SIGNIFICANCE AS THE SOUTHERN ONES. THE COAL IS ALL LIGNITE WITH A CALORIFIC VALUE VARYING BETWEEN 5,000 AND 7,000 BTU A POUND, A MOISTURE CONTENT BETWEEN 35 AND 40% AND A RELATIVELY HIGH ASH CONTENT OF BETWEEN 8 AND 15%, SULFUR

CONTENT IS LOW, NORMALLY BETWEEN 0.5 - 0.7%.

AS A BROAD GENERALIZATION, MOST OF THE IDENTIFIED COAL BEDS IN THE SOUTHERN AREAS ARE OVERLAIN BY CLASS 3 TO 6 LANDS BEING USED FOR WHEAT FARMING AND CATTLE RANCHING.

TWO OF THE AREAS MENTIONED, THE ESTEVAN AREA AND THE WILLOW BUNCH AREA NOW HAVE COAL MINING ACTIVITIES TAKING PLACE. THERE ARE NO IMMEDIATE PLANS TO DEVELOP THE SHAUNAVON AREA.

MORE THAN 80% OF THE COAL THAT IS MINED IN SASKATCHEWAN IS BEING USED FOR THERMAL ELECTRICAL GENERATION. SASKATCHEWAN POWER AT ESTEVAN CONSUMES GREATER THAN 4 MILLION TONS/YEAR, AND IN THE WILLOW BUNCH AREA CONSUMES BETTER THAN 3 MILLION TONS PER YEAR.

THE BOTTOM LINE OF ALL THIS RHETORIC FROM A RECLAMATION POINT OF VIEW IS THAT THERE ARE APPROXIMATELY 640 ACRES OR ONE SECTION OF LAND BEING MINED PER YEAR IN SASKATCHEWAN.

TO THE READER, ONE SECTION PER YEAR MAY SEEM TO BE A VERY SMALL AMOUNT. BUT LARGE OR SMALL THE MAGNITUDE OF THE RECLAMATION CONCERNS ARE CONSISTENT WITH MANY OTHER PROVINCES AND STATES.

THERE IS SODIC OVERBURDEN AND NON-SODIC OVERBURDEN, THERE IS THE QUESTION OF HOW MUCH TOPSOIL AND ROOT ZONE IS ENOUGH AND HOW MUCH IS TOO MUCH, THERE ARE PEOPLE DEMANDING "BETTER THAN OR EQUAL TO" RECLAMATION REGARDLESS OF THE COST AND THERE IS THE GOVERNMENT AND THE MINING INDUSTRY TRYING TO COME UP WITH A RECLAMATION PLAN WHICH WILL BE ACCEPTABLE TO THE MAJORITY.

AS MENTIONED PREVIOUSLY, "RECLAMATION GUIDELINES" ARE IN PLACE NOW IN SASKATCHEWAN. THE HISTORY OF THE DEVELOPMENT OF THESE GUIDELINES

IS AS FOLLOWS:

TWELVE YEARS AGO, IN 1973, SASKATCHEWAN POWER CORPORATION DECIDED TO BUILD A POWER PLANT AND A MINE AT CORONACH, SASKATCHEWAN IN THE WILLOW BUNCH COAL RESERVES. THIS POPLAR RIVER POWER PLANT AND THE POPLAR RIVER MINE BECAME A HOT BED OF CONTROVERSY. BECAUSE OF THE CLOSE PROXIMITY TO THE AMERICAN BORDER AND BECAUSE A WATERWAY ADJACENT TO THE PLANT CROSSED THE BORDER, SPC EXPERIENCED ENVIRONMENTAL CONCERNS NOT ONLY FROM SASKATCHEWAN PEOPLE BUT ALSO FROM THE NEIGHBORING AMERICAN STATES.

FROM A LOCAL POINT OF VIEW THE MINE WAS BEING BUILT IN A PREDOMINANTLY AGRICULTURAL AREA. THE LAND WAS CLASS 3 AND 4 BEING USED ALMOST EXCLUSIVELY FOR CEREAL GRAIN PRODUCTION.

EIGHTY - NINETY PERCENT OF THE BRIEFS PRESENTED AT THE PUBLIC HEARINGS WITH RESPECT TO THE MINE CONCERNED RECLAMATION. THE MESSAGE WAS VERY CLEAR "RECLAIM THE LAND TO BETTER THAN OR EQUAL TO WHAT IT WAS BEFORE, REGARDLESS OF THE COST". THE MESSAGE ALSO SAID "THAT THE GOVERNMENT SHOULD SET RIGID RECLAMATION LAWS AND APPOINT GOVERNMENT INSPECTORS TO ENSURE THE LAWS WERE BEING ADHERED TO".

THE RECOMMENDATION THAT CAME FROM THE BOARD OF INQUIRY WAS THAT SPC MUST PREPARE A DETAILED RECLAMATION PLAN FOR THE POPLAR RIVER MINE AND SUBMIT IT TO THE PROVINCE'S DEPARTMENT OF THE ENVIRONMENT FOR APPROVAL.

THE BOARD OF INQUIRY ALSO SUGGESTED SOME RECLAMATION STANDARDS WHICH WERE IN EXCESS OF WHAT SPC HAD ORIGINALLY PLANNED, BUT IN TURN SOMEWHAT LESS THAN WHAT HAD BEEN REQUESTED BY THE PUBLIC AT THE HEARINGS.

SINCE NEITHER THE GOVERNMENT NOR SPC HAD BEEN IN THIS POSITION BEFORE, NEITHER ONE KNEW WHAT THE OTHER WANTED. SO IT BECAME A MATTER OF HORSE TRADING RECLAMATION PLANS BACK AND FORTH AND BACK AND FORTH UNTIL AN AGREEMENT WAS REACHED.

BY THE TIME AN AGREEMENT WAS REACHED THE MINE DECIDED TO DEVELOP PHASE 2 OF THE MINING AREA AND THE PROCESS STARTED ALL OVER AGAIN.

SINCE THERE WAS TO BE A PHASE 3, 4, AND 5 TO THE MINING OPERATIONS IT WAS DECIDED BY SASKATCHEWAN ENVIRONMENT AND SPC TO FIND A WAY TO "STREAMLINE THE APPROVAL PROCESS".

THIS WAS DONE BY SPC AND SASKATCHEWAN ENVIRONMENT NEGOTIATING A SET OF "RECLAMATION OBJECTIVES" WHICH WOULD BE REQUIRED AT THE POPLAR RIVER MINE. THESE OBJECTIVES ARE KNOWN AS "RECLAMATION GUIDELINES SPC CORONACH MINE" DATED MARCH 9, 1983. THEY ARE NOT LEGISLATION BUT HAVE BEEN AGREED TO IN WRITING BETWEEN THE TWO PARTIES.

THE NET EFFECT OF THE GUIDELINES IS THAT THE MINE CONTRACTOR WILL HAVE TO SUBMIT A LESS DETAILED RECLAMATION PLAN WITH EACH MINE EXPANSION, IT WILL BE SUFFICIENT TO SAY THAT HE WILL MEET THE REQUIREMENTS OF THE GUIDELINES.

WITH THE RECENT SALE OF THE POPLAR RIVER MINE BY SPC TO A PRIVATE CONTRACTOR THE GUIDELINES REMAIN IN EFFECT AS PER A CONTRACTUAL ARRANGEMENT BETWEEN SPC AND THE NEW OWNERS.

IF A COMPLETELY NEW MINE WAS TO OPEN IN THE WILLOW BUNCH AREA, IT IS REASONABLE TO ASSUME THAT SASKATCHEWAN ENVIRONMENT WOULD ASK FOR SOME DETAILED BASELINE DATA ESPECIALLY W.R.T. TO OVERBURDEN ANALYSIS TO

ENSURE THE EXISTING GUIDELINES WOULD BE APPLICABLE.

IT IS IMPORTANT TO REMEMBER THAT THESE GUIDELINES WHEN SIGNED IN 1983 APPLIED ONLY TO THE WILLOW BUNCH AREA.

SINCE THERE WAS ALSO ACTIVE MINING IN THE ESTEVAN AREA IT WAS ONLY NATURAL THAT THE ATTENTION SHIFTED FROM CORONACH TO ESTEVAN AS FAR AS GUIDELINES WERE CONCERNED.

THE GOVERNMENT, OF COURSE, NEEDED GUIDELINES IN THE ESTEVAN AREA SO THAT THERE WERE OFFICIAL RECLAMATION REQUIREMENTS THROUGHOUT THE PROVINCE. THE COAL MINING INDUSTRY NEEDED GUIDELINES SO THAT THEY COULD ACCURATELY PREDICT COAL COSTS AND NEGOTIATE THEIR COAL CONTRACTS ACCORDINGLY. RECLAMATION ACTIVITIES AT ESTEVAN HAD BEEN GOING ON SINCE 1971, BASED ON A GENTLEMAN'S VERBAL AGREEMENT BETWEEN THE MINING COMPANIES AND THE SASKATCHEWAN DEPARTMENT OF MINES. THERE WERE NO SET STANDARDS FOR RECLAMATION AND THEREFORE THE STANDARDS THAT WERE BEING USED WERE DEVELOPED AT THE INITIATIVE OF THE MINING COMPANIES.

INTERESTINGLY ENOUGH THERE WAS NO PUBLIC PRESSURE OR REACTION TO RECLAMATION AT ESTEVAN. THIS WAS SO FOR THREE REASONS. FIRST OF ALL, COAL MINING HAS BEEN EVIDENT IN THE ESTEVAN AREA SINCE THE LATE 1800'S AND STRIP MINING HAS BEEN IN THAT AREA SINCE THE 1930'S; SECONDLY, COAL MINING IS A VITAL INDUSTRY IN THE ESTEVAN COMMUNITY AND FINALLY THE MAJORITY OF THE LAND BEING MINED WAS CLASS 6 AND 7. IN THE PAST TWO YEARS SOME MINING HAS MOVED INTO CLASS 3 AND 4 CULTIVATED LAND. SO FROM THAT POINT OF VIEW IT WAS ANTICIPATED THAT PUBLIC INTEREST WOULD INCREASE, THEREFORE CONSIDERATION OF RECLAMATION GUIDELINES WAS TIMELY.

SASKATCHEWAN ENVIRONMENT AND THE COAL MINING COMPANIES

NEGOTIATED A SET OF OBJECTIVES ENTITLED "RECLAMATION GUIDELINES FOR THE ESTEVAN MINING AREA" DATED MAY 1984.

AS WITH THE CORONACH GUIDELINES THEY ARE NOT LEGISLATION BUT IT IS MUTUALLY UNDERSTOOD THAT THEY ARE TO BE FOLLOWED.

IT IS IMPORTANT TO NOTE THAT THE GUIDELINES THAT WERE FINALLY NEGOTIATED AT ESTEVAN CHANGED VERY LITTLE FROM THOSE RECLAMATION STANDARDS TO WHICH THE COAL MINING INDUSTRY HAD DEVELOPED IN THAT AREA ON THEIR OWN INITIATIVE.

BOTH THE CORONACH AND ESTEVAN GUIDELINES HAVE BEEN MADE AVAILABLE TO THE PUBLIC. THERE HAS BEEN VERY LITTLE TO NO ADVERSE REACTION TO THE GUIDELINES.

ALTHOUGH NEGOTIATED SEPARATELY THE GUIDELINES IN GENERAL ARE THE SAME FOR ESTEVAN AND FOR CORONACH.

THE FOLLOWING IS AN OUTLINE OF SOME OF THE CLAUSES OF THE GUIDELINES TO GIVE THE READER A BETTER PERSPECTIVE OF WHAT THEY ENTAIL.

WITH RESPECT TO MINE PLANNING, RECLAMATION SHOULD BE RECOGNIZED AS AN INTEGRAL PART OF MINING AND THEREFORE SHOULD BE CONSIDERED AS ONE OF THE CONSTRAINTS IN DETERMINING MINING METHODS AND OVERALL MINE PLANS. THE COMPANY SHOULD CONSIDER THE FEASIBILITY OF ALTERNATE MINING APPROACHES WHICH WILL MINIMIZE THE DISTURBANCE OF RECLAIM AREAS (FOR EXAMPLE, BY HAUL ROADS OR RAMPS).

AS FAR AS END LAND USE DETERMINATION IS CONCERNED THE GUIDELINES READ AS FOLLOWS. IN GENERAL, LAND SHOULD BE RESTORED TO ITS PRE-MINE USES. LAND WHICH HAS A C.L.I. CLASSIFICATION OF 1 TO 4 IS TO BE RESTORED TO AGRICULTURAL USE. AGRICULTURAL USE IS DESCRIBED AS LAND

WHICH IS SEEDED AND HARVESTED ON AN ANNUAL BASIS.

ONE NOTABLE EXCEPTION IS THAT BOX CUT SPOIL, END CUTS, HAUL RAMPS AND ROADS ARE EXCLUDED. THEY HAVE TO BE RECLAIMED BUT NOT NECESSARILY TO AGRICULTURAL USE.

REGRADING IS TO TAKE PLACE WITH A VIEW TO PREVENTING EROSION, ENHANCING STABILITY, ELIMINATING HAZARDOUS SLOPES AND FOSTERING INFILTRATION.

SLOPES SHOULD BE LESS THAN 10% FOR LAND WHICH IS INTENDED FOR A CULTIVATED AGRICULTURAL END USE. SLOPES SHOULD BE LESS THAN 15% FOR ALL OTHER END USES AND GENERALLY MUST NOT EXCEED 20%. END CUTS WILL BE REGRADED TO 20%.

DRAINAGE MUST BE PROVIDED SO THAT 80% OF THE SURFACE AREA WILL BE FREE OF STANDING WATER IN A NORMAL PRECIPITATION YEAR UNLESS THERE WERE GREATER AMOUNTS OF PONDING PRESENT BEFORE MINING. IF THERE ARE TO BE PONDS THEY ARE TO BE NO SMALLER THAN ONE ACRE IN SIZE. DRAINAGE SYSTEMS MUST BE DESIGNED SO AS TO PREVENT EROSION.

WITH RESPECT TO TOPSOIL AND SUBSOIL SALVAGE THE CORONACH AND ESTEVAN GUIDELINES DO HAVE SOME DIFFERENCES.

AT CORONACH, THE A AND THE BETTER PART OF THE B HORIZON MUST BE SALVAGED TO A DEPTH OF 12", IF IT'S AVAILABLE, ON CLASS 5 OR BETTER LANDS.

THE CORONACH GUIDELINES ALSO STATE THAT THERE SHOULD BE AT LEAST THREE FEET OF OVERBURDEN INCLUDING COVERSOIL FAVOURABLE TO PLANT GROWTH ON THE SURFACE OF THE RECLAIM AREA. PROVIDED THAT THE FAVOURABLE OVERBURDEN CAN BE REPLACED UNDER NORMAL OPERATING PROCEDURES DURING THE

EXCAVATION PROCESS.

TO DATE THE OVERBURDEN AT CORONACH HAS BEEN FAVOURABLE MATERIAL, IF UNFAVOURABLE MATERIAL IS ENCOUNTERED IT REMAINS TO BE SEEN AS TO WHAT CONSTITUTES "NORMAL OPERATING PROCEDURES".

IN THE CASE OF THE ESTEVAN GUIDELINES THE A HORIZON ONLY IS REQUIRED TO BE STRIPPED AHEAD OF MINING ON LAND CLASSES 4 OR BETTER.

THERE IS NO MENTION IN THE ESTEVAN GUIDELINES OF CREATING A THREE FOOT SURFACE AREA FAVOURABLE TO GROWTH.

THE NET RESULT OF THIS GUIDELINE IS THAT THE A HORIZON ONLY WILL BE REPLACED ONTO SODIC SPOIL FOR A LARGE PERCENTAGE OF THE AREAS BEING MINED AT ESTEVAN.

WITH RESPECT TO CLASS 5 TO 7 LAND WHERE TOPSOIL IS UNAVAILABLE OTHER APPROPRIATE SOIL STABILIZATION PROGRAMS ARE TO BE CONDUCTED.

FROM A REVEGETATION POINT OF VIEW THE ULTIMATE GOAL FOR THE CORONACH AREA IS TO ACHIEVE A SELF-SUSTAINING PLANT COVER IN CASES OF END USES SUCH AS RANGELAND, WILDLIFE AND RECREATION.

IN THE CASE OF CROPLAND THE GOAL IS AN INPUT/OUTPUT REGIME APPROXIMATELY EQUIVALENT TO ADJACENT UNDISTURBED CONDITIONS.

FOR THE ESTEVAN AREA THE REVEGETATION OBJECTIVES DO NOT DIFFERENTIATE BETWEEN VARIOUS END LAND USES. IT SIMPLY STATES THAT THE OBJECTIVES OF REVEGETATION ARE TO RAPIDLY ESTABLISH VEGETATION TO CONTROL EROSION AND TO ACHIEVE A SELF-SUSTAINING PLANT COVER SUITABLE TO POST MINING LAND USES.

BOTH THE ESTEVAN AND CORONACH GUIDELINES REQUIRE FAIRLY DETAILED MAINTENANCE MONITORING AND YEAR END REPORTING; INCLUDING AMONG

OTHER THINGS, METEOROLOGICAL DATA, SOILS ANALYSIS, SEEDING RATES AND PRODUCTION MEASUREMENTS.

NOW THEN, WHAT ABOUT THE QUESTION OF CERTIFICATION?

THERE HAVE NOT BEEN ANY CERTIFICATION REQUIREMENTS IN THE ESTEVAN AREA IN THE PAST, NOR IS THERE NOW IN THE ESTEVAN RECLAMATION GUIDELINES. SASKATCHEWAN ENVIRONMENT OFFICIALS, HOWEVER, DO VISIT THE SITES AT LEAST ONCE A YEAR AND I WOULD SUSPECT THAT THEY WILL AT LEAST BE DOING A VISUAL ASSESSMENT OF THE RECLAMATION RESULTS. SHOULD THEY NOT LIKE WHAT THEY SEE, I AM SURE IT WILL BE BROUGHT TO THE MINING CONTRACTOR'S ATTENTION.

THE CERTIFICATION PROCESS FOR THE POPLAR RIVER MINE AT CORONACH IS SOMEWHAT MORE OFFICIAL. THE FINAL CLAUSE OF THE RECLAMATION GUIDELINES CORONACH MINE READS AS FOLLOWS "AT SOME POINT, CONSENSUS BETWEEN THE MINING CONTRACTOR AND SASKATCHEWAN ENVIRONMENT MUST BE REACHED ON WHETHER OR NOT VARIOUS SEGMENTS OF LAND ARE RECLAIMED. INITIAL GOALS OF RECLAMATION MUST BE PROVEN THROUGH MEASUREMENT OF INPUTS AND OUTPUTS OVER A SUFFICIENT PERIOD OF TIME. RECLAMATION ACTIVITIES AND MONITORING PROGRAMS SHOULD REFLECT THIS EVENTUALITY".

THERE HAS BEEN NO LAND PASS THROUGH THE CERTIFICATION PROCESS TO DATE.

THEREFORE, AS CAN BE SEEN, THE TERMS "LEGISLATION" OR "CERTIFICATION" MUST BE USED VERY LOOSELY AS IT APPLIES TO SASKATCHEWAN CONDITIONS.

EVERYTHING AT THIS POINT IN TIME IS VERY GENERAL, AND SUBJECT TO INTERPRETATION.

THIS GENERALIZED APPROACH HAS BEEN TRIED BEFORE WITH LIMITED AMOUNTS OF SUCCESS. GENERALIZATIONS LEAD TO SPECIFICS AND SPECIFICS LEAD TO LEGISLATION.

THAT MAY VERY WELL BE TRUE, BUT AT THE PRESENT TIME AT LEAST, THERE IS A GOOD OPEN LINE OF COMMUNICATION BETWEEN THE PUBLIC, THE INDUSTRY AND THE GOVERNMENT AND IT WOULD APPEAR THAT ALL THE PARTIES INVOLVED ARE PREPARED TO MAKE AN EFFORT TO KEEP IT THAT WAY. THIS FACT IS EXEMPLIFIED IN THAT THE EXISTING GUIDELINES WERE NEGOTIATED BETWEEN GOVERNMENT AND INDUSTRY AND ACCEPTED BY THE PUBLIC.

THE GUIDELINES THAT ARE IN PLACE ARE, HOWEVER, SUBJECT TO REVIEW IN APPROXIMATELY FIVE YEARS TIME. IF THERE IS AN ONUS ON ANY ONE PARTY AT THIS TIME, THEN IT IS ON THE MINING COMPANIES. THEY MUST RESPECT AND PUT THEIR BEST FOOT FORWARD IN ENSURING THAT THE PRESENT GUIDELINES CAN PRODUCE SUCCESSFUL RECLAMATION RESULTS. FAILURE TO DO SO ON THEIR PART WILL RESULT IN HIGHER STANDARDS AND POSSIBLY EVEN SPECIFIC LEGISLATION.

PROCEEDINGS

ALBERTA RECLAMATION CONFERENCES

1985
Planning and Certification
of Land Reclamation
April 16-17, 1985
Edmonton Inn, Edmonton

1986
Reclamation in the
Eastern Slopes of Alberta
September 25-26, 1986
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C.B. Powter
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Compilers



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For more information on the Alberta Chapter or the Canadian Land Reclamation Association please write to CLRA, Box 682, Guelph, Ontario, Canada N1H 6L3.

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