

**Below is an explanation of how to use this sheet to determine how the recommendations from the Fort McKay Community Specific Assessment (FMSA) were addressed.**

- Each of the recommendations from the FMSA are listed in column A
- Where a recommendation from the FMSA was similar to a recommendation found in the previously completed FMFN Technical Review, the Technical Review recommendation is provided in the same row in column C
- Shell responded to similar recommendations only once.
- Since the Technical Review responses went to FMFN prior to the FMSA responses, 'similar recommendations' were responded to in the Technical Review response and not duplicated in the FMSA response
- Where recommendations in the FMSA were new (i.e. not previously found in the Technical Review), a response was provided in the FMSA response
- Column B therefore notes the document where you will find the response to the FMSA recommendation (i.e. either the Technical Review responses or the FMSA responses)
- Column D provides the specific location in the Technical Review response document where the recommendation from the FMSA was answered

Recommendation from FMSA	The Response to each FMSA Recommendation can be Found in the Following Document	The Following Similar Recommendations were made in the FMFN Technical Review	Technical Review Question Number
Specific procedures be developed for measuring and tracking air quality changes in the region, and in Fort McKay, including a process for formally reviewing air quality changes above specified levels, in consultation with Fort McKay. The purpose of this recommendation is to enable Fort McKay to understand current and future regional air quality changes and to ensure that significant deterioration, beyond acceptable levels (health and ecological protection and Keeping Clean Areas Clean) does not occur in the Community of Fort McKay and in the region.	Shell response to FMFN Technical Review (October 2010)	Fort McKay requests that Shell be required to participate in and support the development of specific procedures for assessing, measuring and tracking air quality changes in the region and in Fort McKay. This would include a process for formally reviewing air quality changes above certain levels to ensure that significant deterioration of air quality in the region and in the Community of Fort McKay does not occur.	8
a detailed and ongoing emission characterization and quantification monitoring program for the tailings ponds be developed in conjunction with Fort McKay with the results of the monitoring reported to Fort McKay at regular intervals;	Shell response to FMFN Technical Review (October 2010)	i. undertake a detailed and ongoing emission characterization and quantification monitoring program from the tailings ponds and that these characterization programs be reviewed and/or developed in conjunction with Fort McKay with the results of the monitoring reported to the Fort McKay IRC at regular intervals;	11a
That Shell be required to undertake a detailed and ongoing emission characterization and quantification monitoring program from the tailings ponds at its Jackpine Mine Expansion and Pierre River Mine tailings and that this program be developed in conjunction with Fort McKay with the results of the monitoring reported to Fort McKay IRC regular intervals. This will improve understanding and management of the potential health odour and environmental effects of tailings pond emissions;			
develop a comprehensive plant site fugitive emissions detection, monitoring and characterization program and associated repair and reduction program that includes periodic DIAL (Differential Absorption Lidar) or equivalent monitoring and that this program be developed in conjunction with the Fort McKay IRC with the results of the monitoring reported to the Fort McKay IRC at regular intervals.		ii. develop a comprehensive plant site fugitive emissions detection, monitoring and characterization program and associated repair and reduction program that includes periodic DIAL ( <i>D</i> ifferential <i>A</i> bsorption <i>L</i> idar) or equivalent monitoring and that this program be developed in conjunction with the Fort McKay IRC with the results of the monitoring reported to the Fort McKay IRC at regular intervals; and	
Shell be required to develop and implement a comprehensive plant site fugitive emissions detection, monitoring/characterization program and associated repair and reduction program that includes periodic DIAL (Differential Absorption Lidar) or equivalent monitoring and that this program be developed in conjunction with Fort McKay, with the results of the monitoring reported to Fort McKay at regular intervals and upon request. This will enable better understanding and management of potential health, odour and environmental effects of tailings pond emissions.		iii. To improve the availability of information and related understanding on odour sources that, the Regulators, in co-operation with industry, collect, collate and publish all the hydrocarbon and reduced sulphur monitoring data that has been generated to date related to mine faces, tailings pond and fugitive bitumen processing and upgrading facility emissions.	
All hydrocarbon and reduced sulphur monitoring data that has been generated to date related to mine faces, tailings ponds and fugitive bitumen processing and upgrading emissions be collected, collated and published.			
All the hydrocarbon monitoring data that has been generated to date related to mine faces, tailings pond and fugitive bitumen processing and upgrading facility emissions be collected, collated and published to improve the availability of information and understanding of the VOC emissions from regional industrial operations and the potential impact of these emissions.			

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A regional odour study be designed and implemented in consultation with Fort McKay, at key areas within Fort McKay's Traditional Lands and within the Community of Fort McKay;	Shell response to FMFN Technical Review (October 2010)	Odour Modeling and Characterization Studies: To better understand and relate odourous emissions to actual odour responses and to improve odour modeling and predictions it is recommended that companies be required to:	11b
Odour panels be used to relate the data collected from this monitoring program to human characterization and response to air quality at the time of sampling		ii. real time, high volume and low detection limit monitoring of the hydrocarbons and reduced sulphur compounds in the vicinity of existing oil sands operations, at key areas within Fort McKay's Traditional Lands (to be identified by Fort McKay), and within the Community of Fort McKay, and	
Odour modeling and other predictive tools be developed that can be used to assess the potential odour impacts of oil sands projects.		iii. using odour panels to relate the data collected in i) above to the human characterization and response to air quality at the time of sampling, and iv. be required to participate (through funding and oversight) in the development and testing of odour modeling and/or other predictive tools that can be used to assess the potential odour impacts of future oil sands projects.	
A notification protocol that is currently being developed by Fort McKay to address episodic air quality issues including odours, be adopted and compliance assured through regulatory measures;	Shell response to FMFN Technical Review (October 2010)	To address odour issues within the Community of Fort McKay it is recommended that:	11c
An ongoing odour monitoring program be developed for the Community which includes human response-based odour monitoring and recording as well as an odour-based air sampling program.		i. companies and the Regulators continue to work with Fort McKay on addressing odour issues in the Community and support the notification protocol that Fort McKay is developing with industry to address episodic air quality issues including odours, and ii. companies and the Regulators support (through funding and oversight) the development of an ongoing Community odour monitoring program including human response-based odour monitoring and recording and also a supporting, within Community, odour-based air sampling program.	
Representative mine fleet units used by Shell be subject to emission testing during typical use conditions to confirm mine fleet NOx emissions (as opposed to relying on modelled emissions).	Shell response to FMFN Technical Review (October 2010)	Fort McKay recommends that Shell be required to conduct or participate in actual emission testing on representative mine fleet units during typical use conditions to confirm actual mine fleet emissions, which is a major area of uncertainty in terms of regional emission estimates.	16
A regional ammonia monitoring study be designed and implemented in consultation with Fort McKay to monitor both point and area emission sources in the region for ammonia using low detection ammonia monitors	Shell response to FMFN Technical Review (October 2010)	In order to gain better understanding in the sources and possible environmental effects of regional ammonia releases, Fort McKay requests that Shell be required to participate, through both funding and oversight, in the development and implementation of a regional ammonia monitoring study. Scope of the study would include monitoring both point and area emission sources in the region for ammonia using low detection ammonia monitors.	22
An assessment be undertaken in consultation with Fort McKay of the potential for ammonia releases from Shell's proposed projects and that methods be developed and implemented to minimize any such emissions.	Shell response to FMFN Technical Review (October 2010)	Fort McKay also requests that Shell be required to undertake studies to determine if there is the potential for ammonia releases from its proposed projects and, if so, indicate how these can be minimized.	23
<p>The regional models used to predict SO2 concentrations in Fort McKay and on Fort McKay's Traditional Lands, be validated, updated and revised in order to:</p> <p>1) increase the accuracy and reliability of predictions of the impacts of existing and future SO2 emissions; and</p> <p>2) identify, understand and manage the factors contributing to the occasional high hourly and daily SO2 levels in Fort McKay</p> <p>Regional air quality models be validated, improved and updated to improve predictions of NO2 and NO concentrations and nitrogen deposition in Fort McKay on its Traditional Lands, which will improve model predictions of the health and environmental impacts of ongoing and future NOx emissions;</p> <p>Regional air quality models be validated, improved and updated to improve predictions of both primary and secondary PM2.5 dispersion in Fort McKay on its Traditional Lands, which will improve model predictions of the impacts of ongoing and future PM2.5 emissions.</p>	Shell response to FMFN Technical Review (October 2010)	In order to gain more accurate predictions of NO2, NO, PM2.5, and SO2 concentrations and depositions in the Community and on Fort McKay's Traditional Lands, it is recommended regional models be validated and updated to improve model predictions of the impacts of future NOx emissions. We recommend that Shell participate in this process.	24

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<p>Solvent losses from the Jackpine Mine Expansion and Pierre River Mine tailings ponds be restricted to less than 3 bbl per 1000 bbl of bitumen within 5 years of commencing bitumen production at these mines. This will reduce potential odour causing solvent related emissions;</p>	<p>Shell response to FMFN Technical Review (October 2010)</p>	<p>Fort McKay expects best practices to be adopted in all aspects of production and processing and requests that Shell assess possible options for additional reductions.                      Fort McKay expects the following additional emission control measures:</p> <p>i. To reduce the regional precursor concentrations of ozone forming compounds that Shell be required to reduce solvent losses to its Jackpine Mine expansion and Pierre River Mine tailings pond to less than 3 bbl per 1000 bbl of bitumen within five years of commencing bitumen production at these mines;</p>	<p>28a</p>
<p>Reduction of NOx emissions from Shell’s proposed gas-fired co-generation units that emit more than 100 tonne/yr of NOx based on the use of post combustion selective catalytic reduction technology or equivalent, consistent with what Shell is proposing for its asphaltene-fired co-generation units. This is intended to minimize regional NOx emission sources and ensure “best practices” for NOx emission management.</p>		<p>ii. To reduce the regional precursor concentrations of ozone forming compounds that Shell be required to reduce the NOx emissions from all gas-fired boilers, heaters and gas turbines that emit more than 100t/yr of NOx and that these reductions be based on the use of post combustion selective catalytic reduction technology, or equivalent, which Shell is proposing for its asphaltene-fired co-generation units.</p>	
<p>NOx emissions from Shell’s proposed gas-fired co-generation units that emit more than 100 tonne/yr of NOx be reduced, based on the use of post combustion selective catalytic reduction technology or equivalent, consistent with what Shell is proposing for its asphaltene-fired co-generation units. NOx is a contributor to fine particulate formation. The latter can be reduced by minimizing regional NOx emissions from major NOx emission sources and ensuring “best practices” for NOx emission management.</p>		<p>iii. To minimize regional PM<sub>2.5</sub> emissions through continuous improvement measures, that Shell implement mine fleet PM<sub>2.5</sub> emission control retrofit devices that become commercially available;</p>	
<p>Shell be required to reduce the NOx emissions from all gas-fired boilers, heaters and gas turbines that emit more than 100t/yr of NOx and that these reductions be based on the use of post combustion selective catalytic reduction technology, or equivalent, which Shell is proposing for its asphaltene-fired co-generation units. This will reduce the regional precursor concentrations of ozone forming compounds.</p>		<p>iv. To better manage NOx emissions from one of the major regional NOx emission source types, i.e., heavy haulers, that Low NOx emission heavy hauler vehicles with NOx emissions similar to the USEPA Tier 4 limits for non-road vehicles in the 600-750 hp size range be developed and mandated; and</p>	
<p>Shell’s existing mine fleet be retrofitted with PM2.5 emission control retrofit devices that become commercially available.</p>		<p>v. To minimize regional NOx emissions through continuous improvement measures, that Shell implement mine fleet NOx emission control retrofit devices that become commercially available.</p>	
<p>That low NOX emission heavy hauler vehicles with NOX emissions similar to the USEPA Tier 4 limits for non-road vehicles in the 600-750 hp size range be developed and mandated in to better manage NOX emissions from one of the major regional NOX emission source types, i.e., heavy haulers.</p>			
<p>Shell’s existing mine fleet be retrofitted with NOX emission control retrofit devices that become commercially available to continuously improve regional NOX emissions.</p>			

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Implementation of the recommendations and work plan work as outlined in CEMA's Interim Nitrogen (Eutrophication) Management Recommendations and Work Plan which requires the development of nitrogen critical loads for sensitive regional ecosystems	Shell response to FMFN Technical Review (October 2010)	To better understand current and potential future regional air-related environmental effects and impacts, and the factors contributing to these effects, it is recommended that Shell, other companies and the Regulators fully support WBEA and CEMA in activities related to monitoring and managing the potential impacts of air emissions on vegetation. The regional monitoring and air emissions effects management activities that should be part of Shell's proposed projects should, at a minimum, include:  i. Implementation of the recommendations and work plan work as outlined in CEMA's Interim Nitrogen (Eutrophication) Management Recommendations and Work Plan which includes the development of nitrogen critical loads for sensitive regional ecosystems,	30
Implementation of CEMA's Acid Deposition Management Framework including full development and deployment of the time-to-effect dynamic acidification model for the entire region		ii. Implementation of CEMA's Acid Deposition Management Framework including full development and deployment of the time-to-effect dynamic acidification model for the entire region,	
Implementation of CEMA's Ozone Management Framework and using the results of the Framework's ozone model predictions in the development of regional ozone monitoring programs and ozone precursor emission management planning;		iii. Implementation of CEMA's Ozone Management Framework and using the results of Framework ozone model predictions in emissions management planning,	
Sensitive and spatially representative ecosystems be identified and vegetation effects and exposure monitoring programs be developed that can accurately determine if, when and where adverse air-related vegetation effects are occurring and to validate and calibrate model predictions;		iv. Sensitive and spatially representative vegetation effects and exposure monitoring programs be developed that can be used to accurately determine if, when and where adverse air-related vegetation effects are occurring and to validate and/or calibrate model predictions, and	
Development of ambient air quality critical limits/levels for NO, NO <sub>2</sub> and NH <sub>3</sub> based on potential impacts on vegetation relevant to Fort McKay and its Traditional Lands		v. Development of ambient air quality critical levels for NO, NO <sub>2</sub> and NH <sub>3</sub> based on potential impacts on vegetation relevant to Fort McKay and its Traditional Lands.	
An "attribution" continuous air quality monitoring station be located between the Community and the proposed Pierre River mine that will monitor for NO <sub>x</sub> , TRS, SO <sub>2</sub> , PM <sub>2.5</sub> and PM <sub>10</sub> , O <sub>3</sub> , THC, VOCs and basic meteorological parameters, and that this station be incorporated into the WBEA ambient monitoring network. Such a monitoring station will enable the frequency and magnitude of the impact of the proposed Pierre River Mine project on air quality in Fort McKay to be determined.	Shell response to FMFN Technical Review (October 2010)	To determine the frequency and magnitude of the impact of the proposed Pierre River Mine project on air quality in Fort McKay it is recommended that Shell be required to provide an "attribution" continuous air quality monitoring station between the Community and the proposed Pierre River mine that would monitor for NO <sub>x</sub> , TRS, SO <sub>2</sub> , PM <sub>2.5</sub> and PM <sub>10</sub> , O <sub>3</sub> , THC, VOCs and basic meteorological parameters, and that this station be incorporated into the WBEA ambient monitoring network.	31
Offsets be developed, in consultation with Fort McKay, to mitigate the loss of existing and potential future groundwater sources.	Shell response to FMFN Technical Review (October 2010)	Offsets be developed to mitigate the loss of existing and potential future groundwater-sources and ground-water resource dependant traditional activities (e.g. loss of fens), in consultation with Fort McKay.	32
The regulators should need to ensure that land-uses adjacent to the Community of Fort McKay and Fort McKay's TLE lands are compatible with land-uses identified by Fort McKay and do not adversely impact Fort McKay's lands. In particular, the regulators need to consult with Fort McKay regarding TLE lands that have been identified by Fort McKay, through its internal land use planning process, for preservation of culture (e.g. Moose Lake area, Creeburn Lake) or residential activities (e.g. Community of Fort McKay, proposed new subdivision located near the Muskeg River) to ensure that these lands will not be adversely affected by industrial activity.	Shell response to FMFN Technical Review (October 2010)	Shell consult with Fort McKay (potentially through the Shell Elders Advisory Group) regarding locations of traditionally-used plants and groundwater sources that may be in the areas adjacent to the Jackpine Mine Expansion and Pierre River Mine Project mining projects (e.g. within potential drawdown or seepage areas) to: i. confirm that the proponent is aware of where they exist; and  ii. plan mitigative measures to protect the groundwater sources and the growing environments	33
Shell be required, at its expense, to collect and have potability tests done on groundwater from any source on Traditional Lands at the request of Fort McKay prior to the use of the groundwater from that source.	Shell response to FMFN Technical Review (October 2010)	Shell be required, at its expense, to collect and test for potability ground water, from any source on traditional lands at the request of Fort McKay, prior to its use.	34

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Development of a groundwater-monitoring program, in consultation with Fort McKay, designed to detect process-affected seepage that bypasses the interception and/or containment system for external and internal tailings disposal areas.	Shell response to FMFN Technical Review (October 2010)	The following be developed in consultation with Fort McKay: i. a groundwater-monitoring program designed to detect process-affected seepage that bypasses the interception and/or containment system for external and internal tailings disposal areas.	36
The development and implementation of a ground water monitoring program to detect process-affected seepage that bypasses the collection system, after closure and reclamation.		ii. development and implementation of a ground water monitoring program to detect process-affected seepage that bypasses the collection system, after closure and reclamation.	
Monitoring to confirm that natural treatment systems, through which process-affected groundwater is directed, work effectively and if they do not, implement changes or mitigation measures to address the problems.		iii. Monitoring to confirm that natural treatment systems, through which process-affected groundwater is directed, work effectively and if they do not, implement changes or mitigation measures to address the problems.	
The development of a ground water monitoring program, in consultation with Fort McKay, to determine the validity of computer and professional-judgement predictions that have the potential to impact ground water resources and the ability of the Community to utilize their traditional lands. Shell should be required to prepare a table summarizing computer-predicted and professional judgment impacts and to outline the groundwater level and quality monitoring to be undertaken to verify that the predictions are accurate. As monitoring data becomes available it should be added to the table and the updated table be provided to the Fort McKay IRC. Deviations from the predicted impacts, which indicate that impacts have been under assessed, shall result in a reassessment of impacts, updating of the table and reassessment of mitigation measures. The reassessment of any impacts be provided to the Fort McKay IRC, and mitigation measures developed in consultation with Fort McKay.	Shell response to FMFN Technical Review (October 2010)	We recommend the development of a groundwater-monitoring program to determine the validity of computer and professional-judgement predictions that have the potential to impact ground water resources and the ability of the Community to utilize their Traditional Lands. Shell should be required to: i. prepare a table summarizing computer-predicted and professional judgment impacts; ii. outline the groundwater level and/or quality monitoring to be undertaken to verify the predictions; iii. the table should be designed to simplify the comparison of previous and new data, so changes are easily detected; iv. monitoring data should be added to the table as it becomes available and the updated table provided to Fort McKay; v. deviations from the predicted impacts which indicate that impacts have been underestimated shall result in a reassessment of impacts, updating of the table and reassessment of mitigation measures; and vi. the measurement of impacts shall be provided to Fort McKay with the results of any reassessment of impacts and mitigation measures developed in consultation with Fort McKay	37
A regional groundwater management framework be developed, in consultation with Fort McKay.	Shell response to FMFN Technical Review (October 2010)	We recommend that a regional groundwater management framework be developed, in consultation with Fort McKay.	38
Fort McKay recommends that a water management plan for the Lower Athabasca River be finalized on an expedited basis and that the regulators ensure that water withdrawal and other impact limits are established for the Lower Athabasca River Watershed. This is of critical important as the state of the Lower Athabasca River Watershed for the Application and Planned Development Cases is assessed as Threatened.	Shell response to FMFN Technical Review (October 2010)	That the regulators ensure that the Phase 2 Athabasca River Water Management Plan is completed on an expedited basis and that this plan includes water withdrawal and impact limits.	39
Shell either provide 3 to 4 months of water storage to ensure continued operations during periods of water withdrawal restrictions or present contingency plans for their operations should such an event arise.	Shell response to FMFN Technical Review (October 2010)	We recommend that Shell either provide three to four months of water storage to ensure continued operations during periods of water withdrawal limitations or present contingency plans for there operations that show how they would meet limits on water withdrawals.	40
Consultation with Fort McKay regarding the design of the project specific water quality, sediment quality and fish monitoring program for the Pierre River Mine.	Shell response to FMFN Technical Review (October 2010)	ii. Fort McKay must be involved in developing the sediment and water quality monitoring program for this project to ensure that the frequency, timing and types of analyses will capture all runoff events and scenarios of concern to Fort McKay.	51
Prohibition of increases in water level of Kearn Lake and the development of methods to prevent such increases. This includes retaining as much of the natural shoreline and riparian area as is required to maintain natural processes and vegetation.	Shell response to FMFN Technical Review (October 2010)	i. Describe the higher diverted flows' effect on augmenting the deposition of particulates and associated contaminants in Kearn Lake; and ii. Provide information about how the berm around the lake may be adjusted to expose more natural shoreline and permit traditional uses to continue.	53
Fort McKay recommends that the acceptance by government and reliance by industry on end pit lakes for treatment of mature fine tailings (MFT) and process waters be stopped until such time as this method of treatment is proven to be viable in a scientifically-defensible manner.	Shell response to FMFN Technical Review (October 2010)	The acceptance and reliance on end pit lakes for treatment of MFT and process affected waters be stopped until such time as this method of treatment is proven to be viable in a scientifically defensible (peer reviewed) manner.	55
Prior to any final decisions affecting the mainstem of the River, finalization of the Watershed Management Plan for the Muskeg River Watershed and Fort McKay be intricately involved in the development and finalization of the Muskeg River Watershed Plan.	Shell response to FMFN Technical Review (October 2010)	Fort McKay recommends finalizing the watershed management planning for the Muskeg River watershed prior to final decisions about the mainstem and expects to be involved in the development and finalization of any such plan.	57

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<p>Mitigation and accommodation measures be developed and consultation with Fort McKay with respect to the lost fishing opportunities caused by the Jackpine Mine, including but not limited to, the development of a fishing opportunities management plan. The Department of Fisheries and Oceans authorized habitat compensation is not compensation or mitigation from the perspective of Fort McKay's lost fishing and other traditional use opportunities due to unknowns about contamination of fish remaining in the system, concerns regarding potential mercury levels in fish in the compensation habitat, the loss of culturally-significant areas and the conversion of river habitat to artificial lakes.</p>	<p>Shell response to FMFN Technical Review (October 2010)</p>	<p>Mitigation and accommodation measures should be developed in consultation with Fort McKay with respect to lost fishing opportunities caused by the JME and PRM including but not limited to the development of a Fishing Opportunities Management Plan. This could include a number of potential strategies (e.g., offsets, additional access/opportunities for fishing). Fort McKay recommends that Shell participate in the development of this plan. Fort McKay may want to work with Shell to identify fishing opportunities that could be located near to the Community and/or accessible from the Community.                      Note that the Department of Fisheries and Oceans authorized habitat compensation is not compensation or mitigation from the perspective of Fort McKay's lost fishing and other traditional use opportunities due to unknowns about contamination of fish remaining in the system, concerns regarding potential mercury levels in fish in the compensation habitat, the loss of culturally-significant areas and the conversion of river habitat to artificial lakes</p>	<p>63</p>
<p>A mandatory minimum set back of 100 meters for all fish bearing water courses, including the main stem of the Muskeg River, Jackpine Creek, Muskeg Creek and other fish-bearing tributaries of the Muskeg River</p>	<p>Shell response to FMFN Technical Review (October 2010)</p>	<p>Fort McKay recommends that a minimum setback be established and mandated:                      i. 100 m from all fish bearing watercourses including the Muskeg River, Jackpine Creek, Muskeg Creek, and other fish bearing watercourse within the Muskeg River and Pierre River watersheds as well as from all diversion channels that drain into fish bearing waters.</p>	<p>65</p>
<p>A minimum setback of 250 metres from the Pierre River Mine project to the Athabasca River be established.</p>	<p>Shell response to FMFN Technical Review (October 2010)</p>	<p>ii.250 m from the Pierre River Mine project to the Athabasca River</p>	
<p>If this project is approved, areas be identified and designed within the proposed mine plan that could potentially support the development of peatlands (fens or bogs) over the very long term. Shell be required to undertake research and development work on its Jackpine Mine site on peatland reclamation.</p>	<p>Shell response to FMFN Technical Review (October 2010)</p>	<p>Fort McKay may wish to ask that Shell develop on-site plans for experimental peatland reclamation and the possible creation of fens and/or bogs during reclamation.</p>	<p>70</p>
<p>The development and implementation by Shell of a program to salvage and relocate known occurrences of rare (vascular) species to areas outside of the Project footprints. This program should also evaluate the potential to re-introduce rare species into reclaimed areas.</p>	<p>Shell response to FMFN Technical Review (October 2010)</p>	<p>Fort McKay may wish to request that Shell develop and implement a program to salvage and relocate known occurrence of rare species to areas located outside the project footprint before development occurs. This program should also evaluate the potential to reintroduce rare species into reclaimed areas.</p>	<p>72</p>
<p>Reclamation criteria for Shell's mine sites incorporate successful establishment of traditional plants within the disturbed areas, with monitoring and progress reporting to the regulators and Fort McKay.</p>	<p>Shell response to FMFN Technical Review (October 2010)</p>	<p>Fort McKay may wish to ask Shell to develop reclamation practices that utilize a broad range of traditional use plants in their reclamation programs and to develop a list of which TU plants are available for reclamation, in consultation with Fort McKay.</p>	<p>73</p>

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Immediate reduction of harvest levels for moose throughout the entire oil sands region until current moose populations are known. Current moose populations are unknown in many of the remaining (unmined) wildlife management units in the oil sands region.	Shell response to FMFN Technical Review (October 2010)	Moose populations may be declining in parts of the oil sands region. Surveys to determine moose and wildlife populations are required throughout the oil sands region. We recommend that: i. ASRD immediately reduce harvest levels for moose in the region, until additional population information is available	86
Completion of moose surveys for all oil sands region WMUs within the next two years to determine the moose population. Once the population is known, an appropriate management plan and actions be taken in consultation with Fort McKay.		ii. ASRD conduct moose surveys for all oil sands region Wildlife Management Units within the next two years;	
		iii. Shell contribute to these surveys; and	
		iv. Once moose surveys are completed that ASRD takes appropriate management action, in consultation with Fort McKay	
Determination of the remaining population of Canada Lynx, Marten, Fisher, Beaver and other wildlife populations. The population levels for these species are currently poorly understood. Once populations are determined, development of management and mitigation methods in consultation with Fort McKay.	Shell response to FMFN Technical Review (October 2010)	We recommend that ASRD determine the remaining population of Canada Lynx, Marten, Fisher, Beaver and other wildlife populations. The population levels for these species are currently poorly understood. Once populations are determined, ASRD should develop management methods in consultation with Fort McKay.	87
Establishment of conservation offsets, including protected areas, to preserve wildlife habitat and populations and provide opportunities for traditional land use in proximity to the Community of Fort McKay.	Shell response to FMFN Technical Review (October 2010)	We recommend: i. Conservation offsets including protected areas are established, in consultation with Fort McKay, to preserve wildlife habitat, wildlife populations and provide opportunities for traditional land use in proximity to the Community of Fort McKay	88
		ii. Reclamation of disturbed areas in the mineable oil sands area be accelerated; that additional new development approval be based upon reclamation performance and re-establishment of effective wildlife habitat. For example, approval of further development be contingent on the amount of moose habitat re-established in reclaimed areas or wildlife habitat protected with conservation offsets.	
		iii. Shell support a conservation offsets plan	
Placement of tailings in end pit lakes be prohibited in favour of alternative methods of tailings disposal or avoidance of the creation of wet tailings through alternative technologies. Final landscape design modified to include more potential wetland areas and methods must be developed to reclaim muskeg (organic wetlands).	Shell response to FMFN Technical Review (October 2010)	i. Fort McKay opposes the deposition of tailings into end pit lakes as a method of long-term tailings storage.	130
		ii. In addition, Shell should determine the levels of water-quality parameters that will be necessary to achieve reclamation certification for fish habitat, estimate the time required to achieve these levels and design their material placement and drainage systems accordingly.	
Reclamation techniques for landscapes and upland forests be further developed and improved.	Shell response to FMFN Technical Review (October 2010)	i. Fort McKay may wish to include in its agreement with Shell, that it prepares a more detailed scheduling and direct placement of upland soils.	134
Reclamation techniques are improved or developed, for a full range of upland and wetland types, to mitigate for the effects of disturbance to species, ecosystem and landscape level biodiversity.			
A mitigation, compensation and accommodation plan be developed in consultation with Fort McKay in relation to the adverse effects and loss of traditional land use opportunities within Fort McKay's Traditional Lands.	Shell response to FMFN Technical Review (October 2010)	The regulators should establish, in consultation with Fort McKay, protected areas within Fort McKay Traditional Lands that protect a range of ecological values and traditional uses.	140
The regulators should set limits the density of linear features that can be allowed within Fort McKay's Traditional Lands at any given time, in consultation with Fort McKay. Density limits would require successful implementation of Integrated Landscape Management (coordination of access features between users) and would prevent further construction of access features once limits are reached.	Shell response to FMFN Technical Review (October 2010)	Fort McKay may want to request that the regulators consult with them in developing access management plans within Fort McKay's Traditional Lands that include limits to motorized access, designated use areas and limits on the density of linear features. Density limits would require successful implementation of Integrated Landscape Management (coordination of access features between users).	143
The regulators should ensure that Fort McKay's access to their traditional lands be restored and maintained in the face of increasing industrial development. This includes preferential access and modes of access for Fort McKay community members, where access may be restricted for non-Fort McKay community members.			

Recommendation from FMSA	The Response to each FMSA Recommendation can be Found in the Following Document	The Following Similar Recommendations were made in the FMFN Technical Review	Technical Review Question Number
The regulators ensure that access management plans are developed within Fort McKay's Traditional Lands, in consultation with Fort McKay including but not limited to areas that have been identified by Fort McKay as high priorities for access management (Moose Lake corridor, East Athabasca Highway Corridor, Richardson Backcountry). Fort McKay should be involved in the implementation of these access management plans.	Shell response to FMFN Technical Review (October 2010)	Fort McKay may want to request Shell commit to participating in the development of regional access corridors and management plans that are relevant to their existing and proposed Projects. This may include an east side corridor access management plan and/or an access management plan for the west side of the Athabasca River (to complement or expand on the Moose Lake Access Management Plan).	144
Development of reclamation planning and criteria, in consultation with Fort McKay, that is aimed at restoring the land for traditional and other uses by the Community and that incorporates the knowledge held by Fort McKay members regarding the land prior to disturbance: "to develop an end land use that which is most valuable to the people of Fort McKay and the broader region, it is useful to build ecosystem function with associated cultural practices" (Garibaldi 2006).	Shell response to FMFN Technical Review (October 2010)	Fort McKay would like Shell to describe how they will reclaim land for traditional purposes, including which plant species and animal habitat will be targeted. As reclamation research and practices evolve, Fort McKay would like to Shell to provide updates and opportunities for discussion regarding the status of reclaiming land for traditional use.	153
Shell develop with Fort McKay a mitigation and offset plan in relation to the adverse effects and loss of key cultural and traditional use areas that would be affected by the Jackpine Mine Expansion and Pierre River Mine.	Shell response to FMFN Technical Review (October 2010)	Fort McKay would like to collaborate with Shell to develop a mitigation and offset plan in relation to the adverse effects and loss of key cultural and traditional use areas that would be affected by the JME and PRM.	154
<u>Further development of Fort McKay's Cultural Heritage Strategy</u>	Shell response to FMFN Technical Review (October 2010)	Fort McKay would like Shell to contribute to further development of Fort McKay's Cultural Heritage Strategy and other programs aimed at strengthening individual and Community health.	155
Other systems and programs aimed at strengthening individual and Community health and well-being that is no longer currently achieved to the same extent through traditional pursuits and way of life			
Shell address specific trappers issues related to Fort McKay community members Traplines that occur within the Jackpine Mine Expansion development area	Shell response to FMFN Technical Review (October 2010)	Fort McKay would like to confirm that Shell will continue ongoing consultation with affected trappers regarding project development and provide compensation or implement mitigation measures as needed following the Fort McKay Trapper Compensation Guidelines.	156
Regulators develop with Fort McKay a mitigation, compensation and accommodation plan in relation to the adverse effects and loss of key cultural and traditional use areas that would be affected by the Jackpine Mine Expansion and Pierre River Mine.	Shell response to FMFN Technical Review (October 2010)	Fort McKay would like Shell to establish access management plans, in collaboration with the Fort McKay IRC, to facilitate Fort McKay Community member access to traplines and other traditional use areas throughout the life of the mines.	157
Lease/project specific access management plans be developed to facilitate access of Fort McKay community members to Traplines and other traditional use areas.			
The regulators should ensure that access management plans allow appropriate uses within designated areas. For example, designated high-impact recreation areas – given the interest of a component of the Lower Athabasca Region's population in high-impact recreation (e.g. "quad" usage as a motor-sport, rather than as a means of back-country access), and the damage done to ecologically sensitive areas through this mode of recreation, Fort McKay believes that it may be desirable to designate high-impact recreation areas in areas whose ecological function and integrity may already be compromised. Examples of candidate areas might include quarries, gravel pits and mine waste areas.	Shell response to FMFN Technical Review (October 2010)	Fort McKay would like the Government of Alberta to support and include the current and future submissions by the Community of Fort McKay in the Lower Athabasca Regional Plan.	158
The measures discussed above will only partially moderate or offset the loss to Fort McKay of traditional land use opportunities and ability to exercise their Treaty and aboriginal rights. The governments need to develop further mitigation and accommodation measures with Fort McKay to address the cumulative effects of industrial development on their cultural heritage	Shell response to FMFN Technical Review (October 2010)	Fort McKay requests that the Governments of Canada and Alberta continue to support the FMSA process in future regional development applications.	164
Shell and other regional operators work with Fort McKay to finalize its HTES air quality criteria and targets. This recommendation is aimed at enabling Fort McKay's goals and strategies for air quality management to be implemented and will also assist in future project planning and air quality and emission management programs.	Shell Response to FMSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
The development and implementation of a complete Watershed Management Plan for the Muskeg River Watershed, in consultation with Fort McKay, to establish impact limits that retain both undisturbed areas and natural seasonal stream flow patterns, and provide direction to the Jackpine Mine Expansion and other developments. The state of the Muskeg River Watershed is assessed as Endangered for the Base Case, Application Case and Planned Development Case: a watershed management plan is critical. (project-specific and cumulative effects recommendation).	Shell Response to FMSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--

Recommendation from FMCSA	The Response to each FMCSA Recommendation can be Found in the Following Document	The Following Similar Recommendations were made in the FMFN Technical Review	Technical Review Question Number
That Shell takes steps to minimize large changes in streamflow associated with the Pierre River Mine. The Pierre River watershed is assessed as Threatened for the Application case, primarily due to changes in seasonal stream flow.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
In addition to project specific monitoring by Shell, monitoring of the Pierre River Mine Project watercourses and surface water bodies should be undertaken pursuant to a scientifically defensible and peer-reviewed regional monitoring program. While RAMP is a regional based monitoring program, it samples on an infrequent basis so therefore it cannot provide the only monitoring for the project or the region.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
A mitigation, compensation and accommodation plan to be developed in consultation with Fort McKay with respect to adverse effects and loss of key cultural and traditional use areas of the Muskeg River watershed, including Kearn Lake, and Athabasca River tributaries affected by the Pierre River Mine Project.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Planning of oil sands development based upon wildlife habitat values and traditional land use. For example, preferentially allow oil development in land that is less valuable to the Fort McKay Community and has lower wildlife habitat quality values.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Limit approvals to developments that have the lowest environmental impacts on wildlife habitat. For example, in-situ developments with low emissions with effective wildlife mitigation (such as wildlife pipeline crossings) in low quality wildlife habitat	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Acceleration of reclamation of disturbed areas in the mineable oil sands area. Additional development approval based upon reclamation performance and re-establishment of effective wildlife habitat. For example, approval of further development be contingent on the amount of moose habitat re-established in reclaimed areas or wildlife habitat protected with conservation offsets.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Establishment of limits on the amount of development necessitating ground disturbance that can occur within Fort McKay's Traditional Lands and the oil sands region, in consultation with Fort McKay.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Further mitigation measures and accommodation strategy be developed in consultation with Fort McKay: reclamation does not provide effective mitigation for the Project specific or cumulative loss of Traditional Lands and resources upon which Fort McKay's culture and rights depend.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Establishment of limits on the amount of development necessitating ground disturbance that can occur within Fort McKay's Traditional Lands and the oil sands region, in consultation with Fort McKay.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Further mitigation measures and accommodation strategy be developed in consultation with Fort McKay: reclamation does not provide effective mitigation for the project-specific or cumulative loss of Traditional Lands and resources upon which Fort McKay's culture and rights depend.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
The maximum area permitted to be disturbed at any time at both the Pierre and Jackpine Mine Expansion, should be established with further disturbance being permitted only upon successful reclamation of previously disturbed areas	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
The regulators should establish limits on the amount of development (i.e., ground disturbance) that can occur within the Fort McKay Traditional Lands and oil sands region and any one time.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
The regulators should establish limits on the amount of developmet (i.e. ground disturbance) and flow changes that can occur within watersheds within Fort McKay's Traditional Lands and the oil sands region at any one time.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
The regulators should establish, in consultation with Fort McKay, protected areas within Fort McKay Traditional Lands that protect a range of traditional uses and values, including the biodiversity necessary to preserve traditional land use. All protected areas need to be accessible to Fort McKay and a portion of protected areas need to be located near the Community.	Shell Response to FMCSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--

Recommendation from FMSA	The Response to each FMSA Recommendation can be Found in the Following Document	The Following Similar Recommendations were made in the FMFN Technical Review	Technical Review Question Number
The regulators should set limits on motorized access for non-Fort McKay members within Fort McKay's Traditional Lands.	Shell Response to FMSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Fort McKay should be made aware of economic opportunities arising from recreation and tourism associated with access and/or land use management plans.	Shell Response to FMSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Recreation in the post-mining landscape of the surface water and groundwater hydrologic conditions that existed prior to mining.	Shell Response to FMSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Establishment of criteria to determine reclamation success, including standards for water quality.	Shell Response to FMSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Fort McKay be consulted and its approval sought prior to the issuance of any reclamation certificate on its Traditional Lands.	Shell Response to FMSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--
Alternative accommodation measures including conservation offsets and protected areas be developed, in consultation with Fort McKay. Reclamation is not considered effective mitigation for the purpose of environmental assessment or management of adverse effects due to the (a) uncertainty of the effectiveness of current reclamation processes and technology, (b) the lack of knowledge and ability to restore organic wetlands (c) the length of time reclamation will take, and (d) the inability to restore the land to its pre-disturbance state.	Shell Response to FMSA Recommendations (November 2010)	N/A - This was a new recommendation not previously addressed in the Technical Review	--